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April 1996
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GENCORP
AEROJET

Advanced Microwave Sounding Unit-A
Performance Verification Plan

Contract No: NAS 5-32314
CDRL: 022

Submitted to:

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

Submitted by:

Aerojet
1100 West Hollyvale Street
Azusa, California 91702

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APPENDIX

A	Integrated Manufacturing And Instrument Test Plan (IMITP)	

Section 1

SCOPE

1.1 Overview

In accordance with the performance verification requirements given in Section 3 of Performance Assurance Requirements (PAR) for EOS and METSAT Instruments, GSFC S-480-79, this document presents a Verification Plan for the AMSU-A instrument. This plan is submitted in response to Contract NAS 5-32314, CDRL 022..

Section 2

APPLICABLE DOCUMENTS

2.1 Government documents

2.1.1 National Aeronautics and Space Administration (NASA)

GSFC-S-480-80	Performance and Operation Specification for the EOS/METSAT Integrated Programs AMSU-A Instrument. **(POS)**
GSFC-S-480-79	Performance Assurance Requirements for the Earth Observing System (EOS) & Meteorological Satellites Project (METSAT) Advanced Microwave Sounding Unit - A. **(PAR)**
GSFC-422-11-12-01	General Interface Requirements Document for EOS Common Spacecraft/Instruments-EOS PM Project. **(GIRD)**
GSFC-422-11-12-02	Unique Instrument Interface Document for the AMSU-A-EOS PM Project. **(UIID)**
RCA IS-3267415	METSAT General Instrument Interface Specification. **(GIIS)**
RCA IS-2617547, RCA-IS-2624483	AMSU-A Unique Instrument Interface Specification. **(UIIS)**

2.2 Aerojet

AE-26607	Antenna Subsystem Specification
AE-26608	Receiver Subsystem Specification
AE-26609	Signal Processor and Power Distribution Subsystem Specification
AE-26611	Ground Support Equipment Specification

verification method and the level of build-up at which the verification of each requirement in the POS, GIRD, UIID, UIIS, GIIS, and applicable sections of the PAR is accomplished.

3.1.2 Performance Verification Procedures

Verification Procedures (CDRL 412) shall be generated for all inspection, demonstration, and test requirements. Verification Procedures cover all inspections, demonstrations, and tests performed at the system and subsystem level, and detail the process required to verify that the system and subsystem requirements are met. AMSU-A Test Procedure and Process Specifications are shown in Figure 1.

3.1.3 Verification Analyses

Analyses necessary to support Performance Verification are submitted under several major CDRL items well before the inspection, demonstration, and test activities to allow NASA ample review time. These analyses include: the Radiometric Math Model (CDRL 101), the Structural Math Model (CDRL 102), the Thermal Math Model (CDRL 103), Stress Analyses Reports (CDRL 113), and Worst-Case Analyses (CDRL 112). Miscellaneous analyses are submitted as Engineering Analyses Reports (CDRL 104). All analyses identified by the Performance Verification Matrix as required for verification will be submitted as a CDRL item.

3.1.4 Verification Reports

All Performance Verification inspections, demonstrations, and tests will be conducted under Quality Assurance witnessing. After an inspection, demonstration, or test is completed, a copy of the signed-off Data Sheet will be incorporated into the Performance Verification Report (CDRL 208). In most instances, the Verification Report is simply a cover sheet, brief overview of the results (including degree to which the objectives were accomplished, and other significant results), and the attached Data Sheet copies.

3.1.5 Final Verification Reporting

A compilation of the Performance Verification results on a unit will be assembled into a Final Verification Report and will be submitted with the unit at Pre-Ship Review as part of the Specification Compliance and Calibration Data Book.

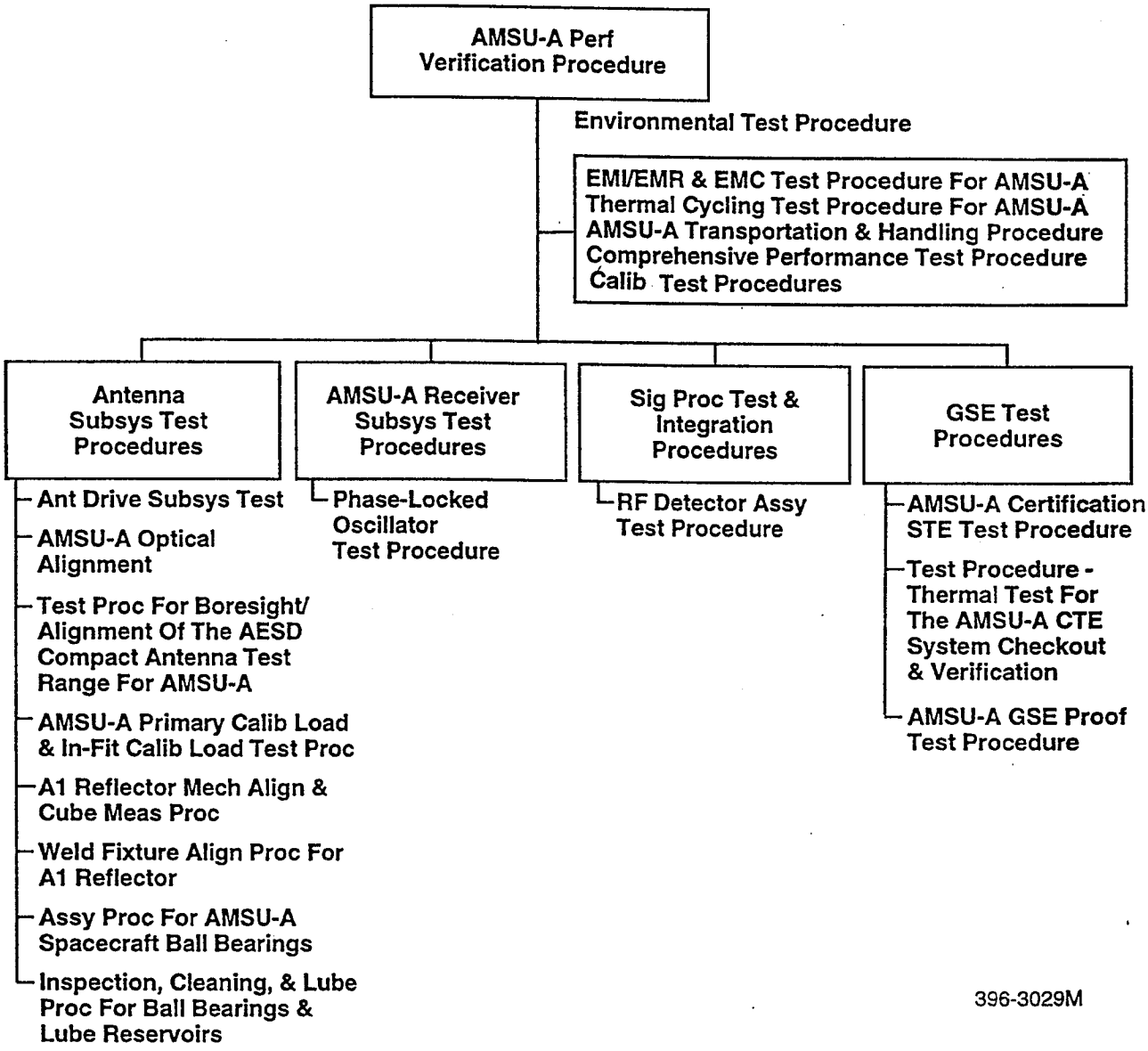

Figure 1 AMSU-A Test Procedure and Process Specifications

Section 4

VERIFICATION TEST PLAN

4.1 General Test Flow Overview

The detailed hardware implementation flow diagram for the EOS/AMSU-A and METSAT/AMSU-A program is provided in IMIPT Attachment A. The simplified test sequence is shown in figure 2.

4.1.1 Subassembly and Subsystem Test Flow

After initial integration of the components into AMSU-A subsystems, the three subsystems will be independently verified. Verification requirements are provided in the subsystem verification specifications.

4.1.1.1 Antenna Subsystem - The comprehensive test flow shown in figure 3 will provide design, performance, and alignment verification of the Antenna Subsystem.

All component parts of the antenna assemblies will undergo initial visual inspection and mechanical dimensional measurements to eliminate obvious nonconformance conditions. Contour measurements will be performed on all reflector surfaces to ensure conformity to surface tolerance requirements.

RF component testing will be performed on the feedhorns, RF multiplexers, and warm loads to evaluate their performance before integration into higher-level assembly. VSWR tests will be performed on the multiplexer/feedhorn combinations to assure a proper match between the two components.

The drive assembly will be verified by conducting a series of tests including starting torque, motor commutation, back EMF, and speed characteristics to test procedures currently in existence. Final antenna drive subassembly tests will be performed at the system integration level with all related subassemblies installed and interconnected.

The reflectors, shrouds, feedhorns, warm loads, and drive motors will next be assembled onto the instrument mechanical structure, and optical alignment of the assembly will be performed to a detailed alignment procedure. This alignment will be used to optimize the position of each reflector's focal point relative to the phase center of its accompanying feedhorn. The alignment cube for each module will also be aligned and its position measured relative to the spacecraft mounting surface of the module.

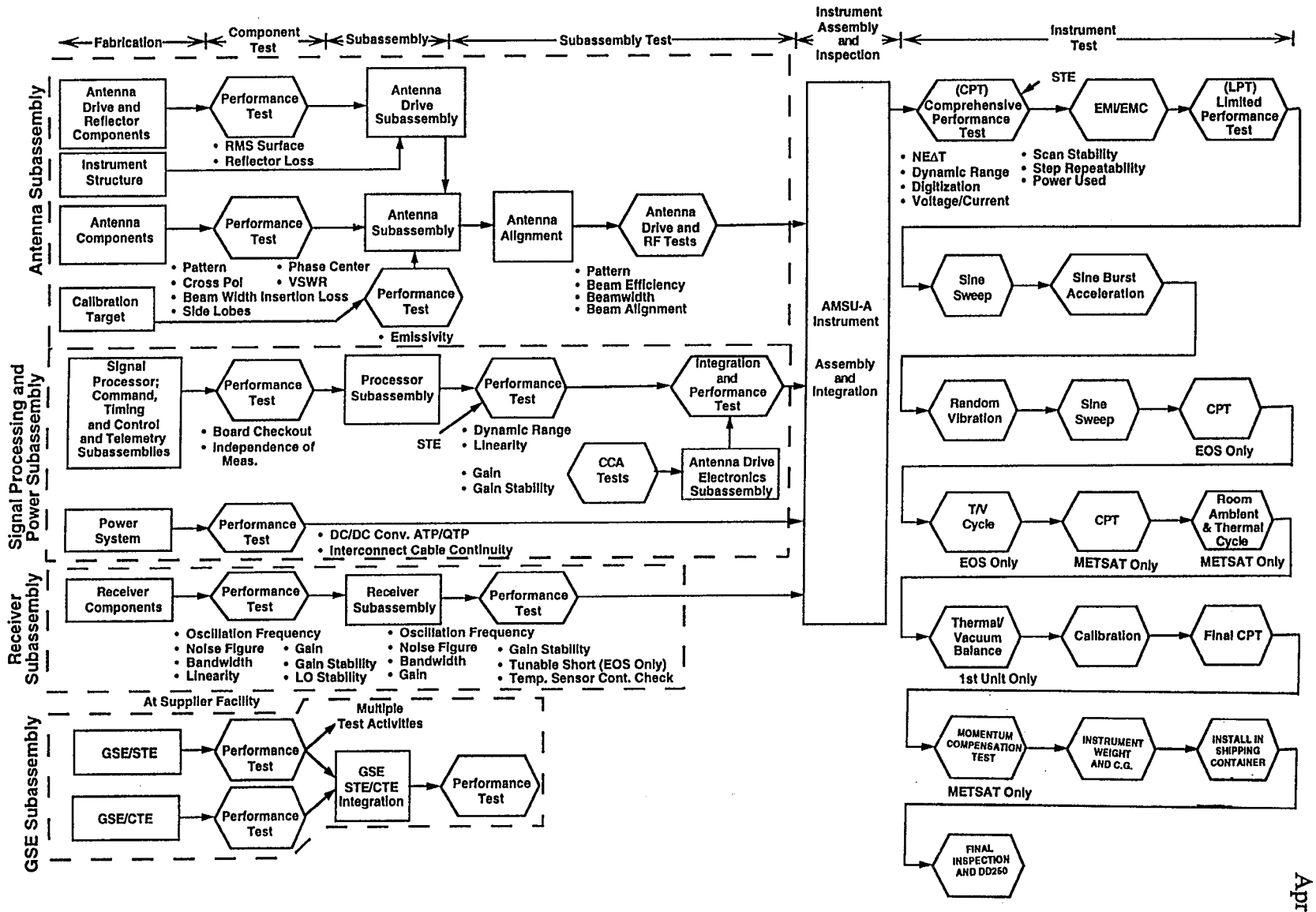

Figure 2 AMSU-A Verification Flow Diagram

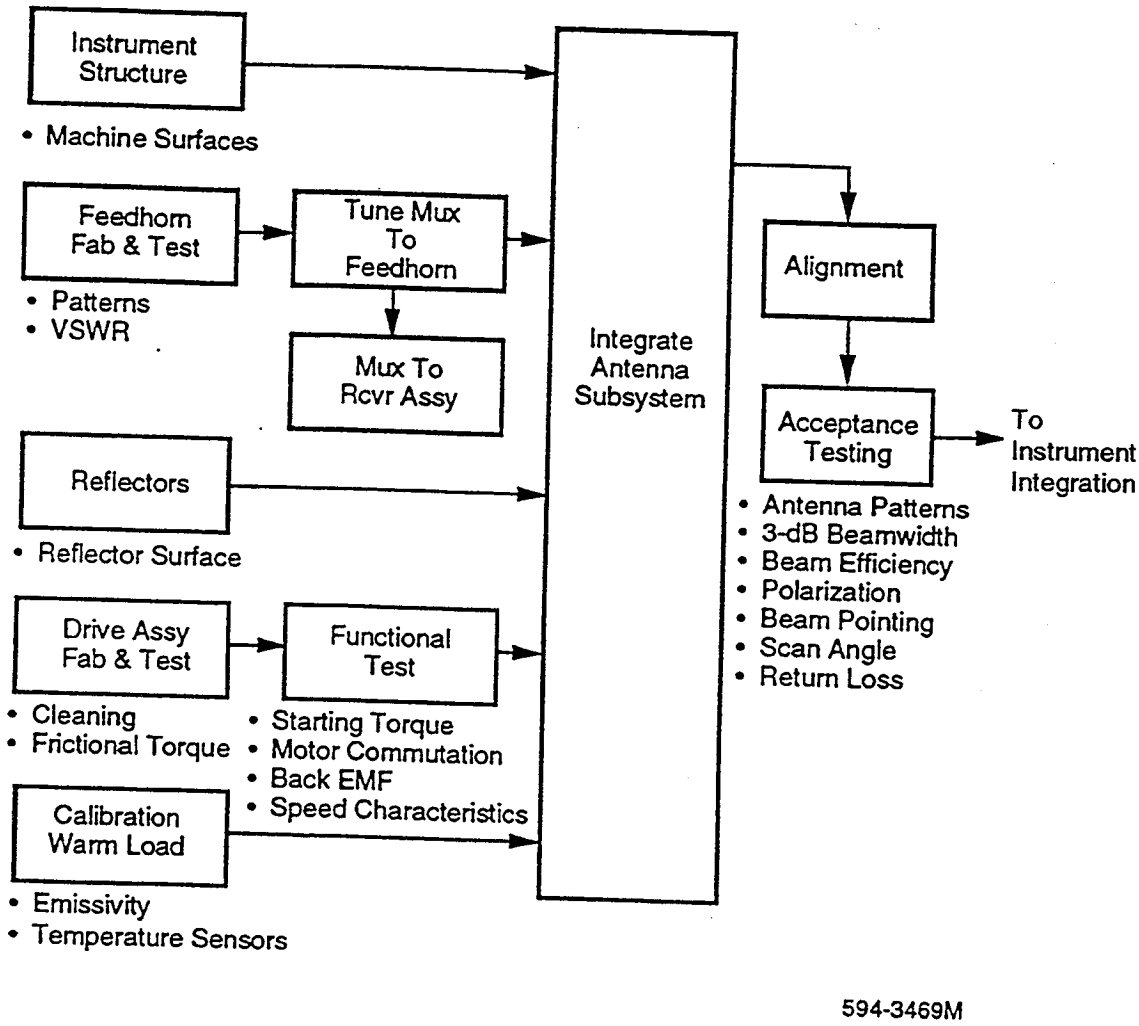

Figure 3 Antenna Subsystem Test Flow

Acceptance testing of the antenna assembly consists of radiation pattern measurements, including beam width, beam pointing, and beam efficiency tests. A boresight and alignment procedure will be used to ensure that the beam pointing angle measurements conform to specification requirements.

4.1.1.2 Receiver Subsystem - Verification of the performance of the Receiver subsystem begins at the part level with parts screening, burn-in, and destructive physical analyses (DPA). It then proceeds to the component level for performance verification testing, and ultimately to the assembly level for testing to ensure that performance satisfies all requirements. Tests required to verify the minimum performance of key receiver components are delineated in Figure 4. These performance characteristics will be verified prior to the integration of the receiver subassemblies into the AMSU-A1 and AMSU-A2 modules.

Once the Receiver subsystem assemblies are integrated, the performance tests will be conducted in accordance with the applicable test procedure. Once requirements are met, the receiver will be integrated into the instrument for futher testing.

4.1.1.3 Signal Processing and Power Subassembly - Verification of Signal Processor performance is outlined in Figure 5. It will begin at the parts level with screening, burn-in, DPA in accordance with the subcontractor SOW (see Figure 6). Parts will then be assembled into circuit card assemblies (CCA). Using appropriate test fixtures, each CCA will then be individually tested to a dedicated test procedure to assure proper operation. CCAs will next be integrated with the signal processor card rack assembly and subsystem verification will then be performed. Final verification will be performed after integration of the subsystem.

RF detectors used in the analog signal processor will be screened and qualified for acceptance by the supplier. They will be tested for linearity and frequency response before integration. After characterization, the detector will be integrated into the detector/preamplifier subassemblies, then gain, offset, linearity, and response tests will be performed.

The power distribution portion of the subsystem will be verified as shown in figure 6.

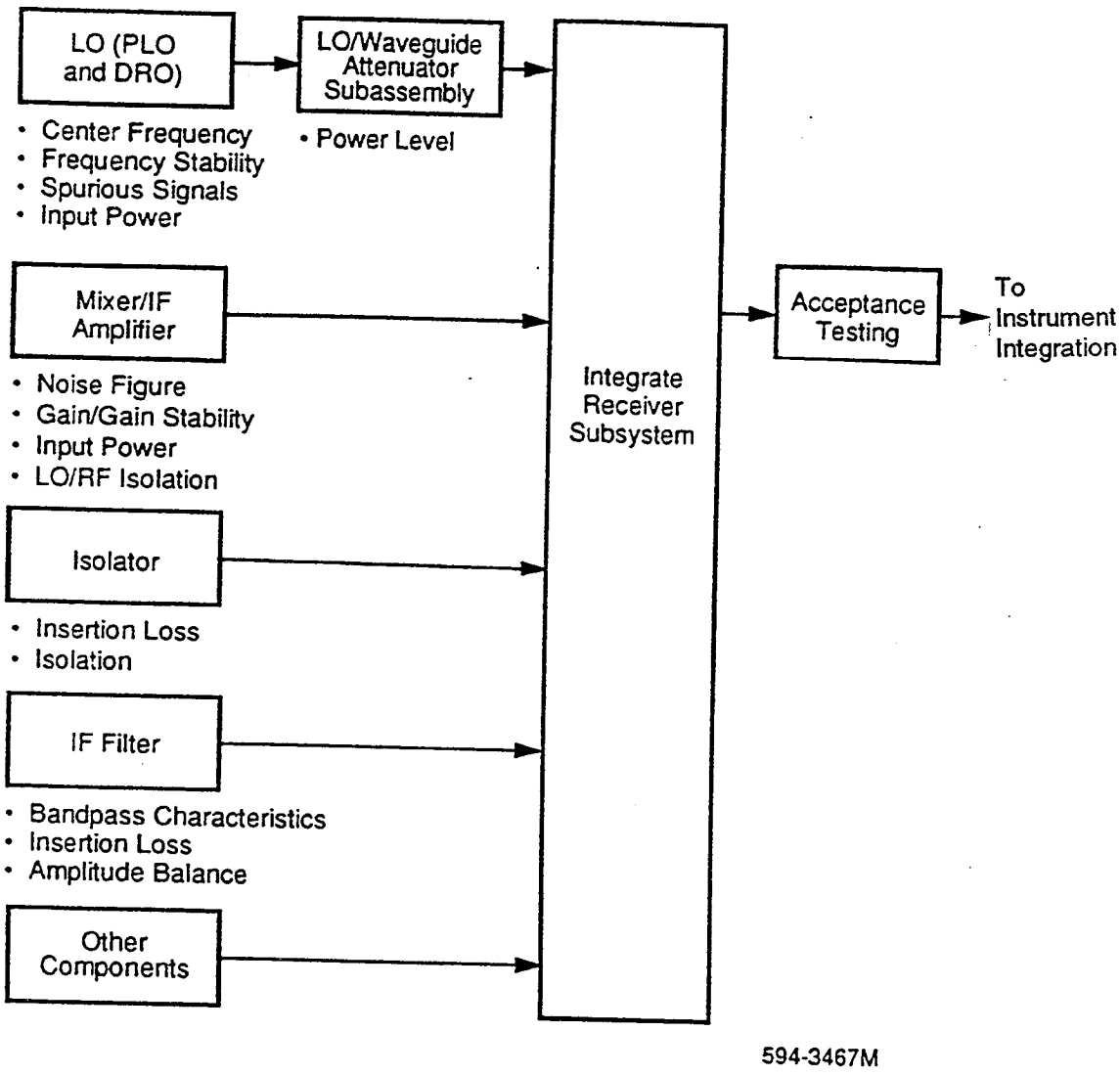

Figure 4 Receiver Subsystem Test Flow

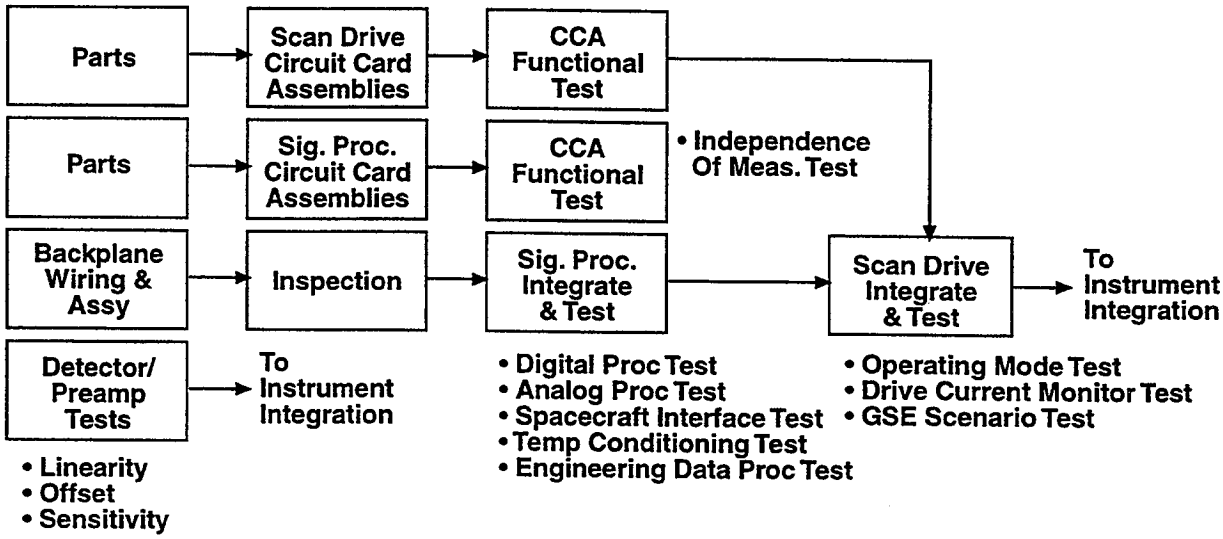

Figure 5 Signal Processor Test Flow

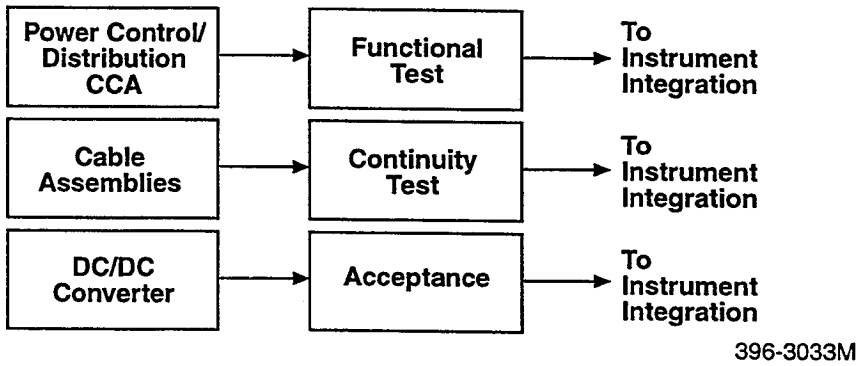

Figure 6 Power Subsystem Test Flow

Verification of the DC/DC Converter will be performed by the supplier and monitored by Aerojet.

Interconnecting cables for the AMSU-A instrument will be subjected to continuity tests prior to integration. The cabling design will minimize the need for point-to-point wiring tests after integration.

A special test fixture will be constructed to test the power distribution and control assemblies. It will consist of a simple test panel that supplies simulated commands and reads status signals. It will work in conjunction with a DC/DC Converter emulator which replaces the DC/DC converter during initial system testing.

4.1.2 Instrument Test Flow

The instrument assembly and integration test flow is shown in Figure 7. The process will begin with a review of data collected on the parts and subassemblies prior to integration, then part numbers will be recorded and assemblies will be integrated. Next a critical wiring check and grounding test will be conducted. The drive motor assembly will be tested to verify multiple parameters. Several electronics characterization and calibration procedures will be completed before the instrument proceeds to CPT. CPT will consist of the elements shown in Figure 8. The instrument STE will interface with the instrument, providing power, commands, and real-time data evaluation. Instrument LPT (limited performance test) will be performed to verify performance of the instrument. LPT will consist of the element shown in Figure 9.

Instrument CPT will be followed by qualification/acceptance testing, with limited performance tests (LPT) performed between each set of tests as shown in the IMITP (Appendix-A).

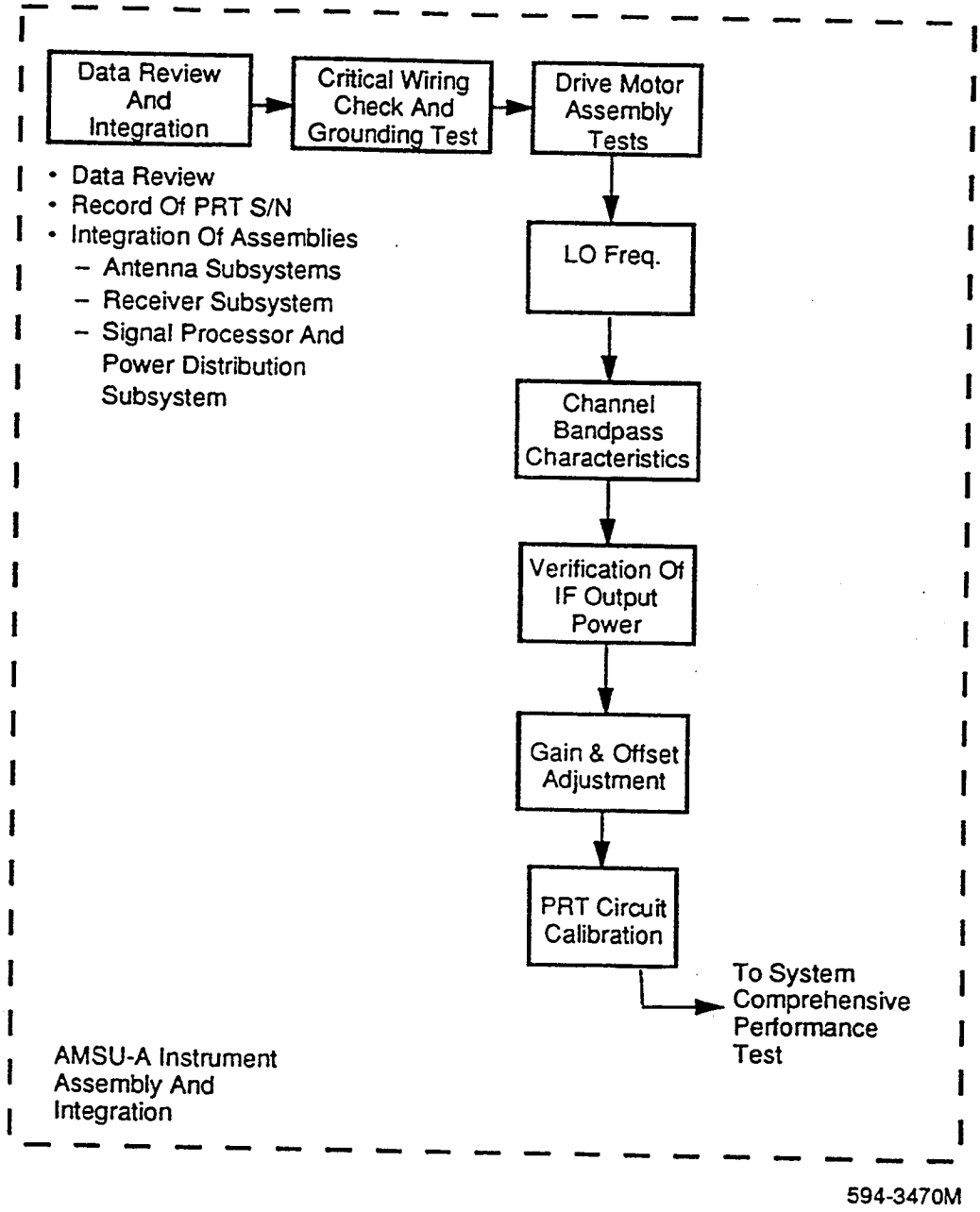

Figure 7 Instrument Level Test Flow

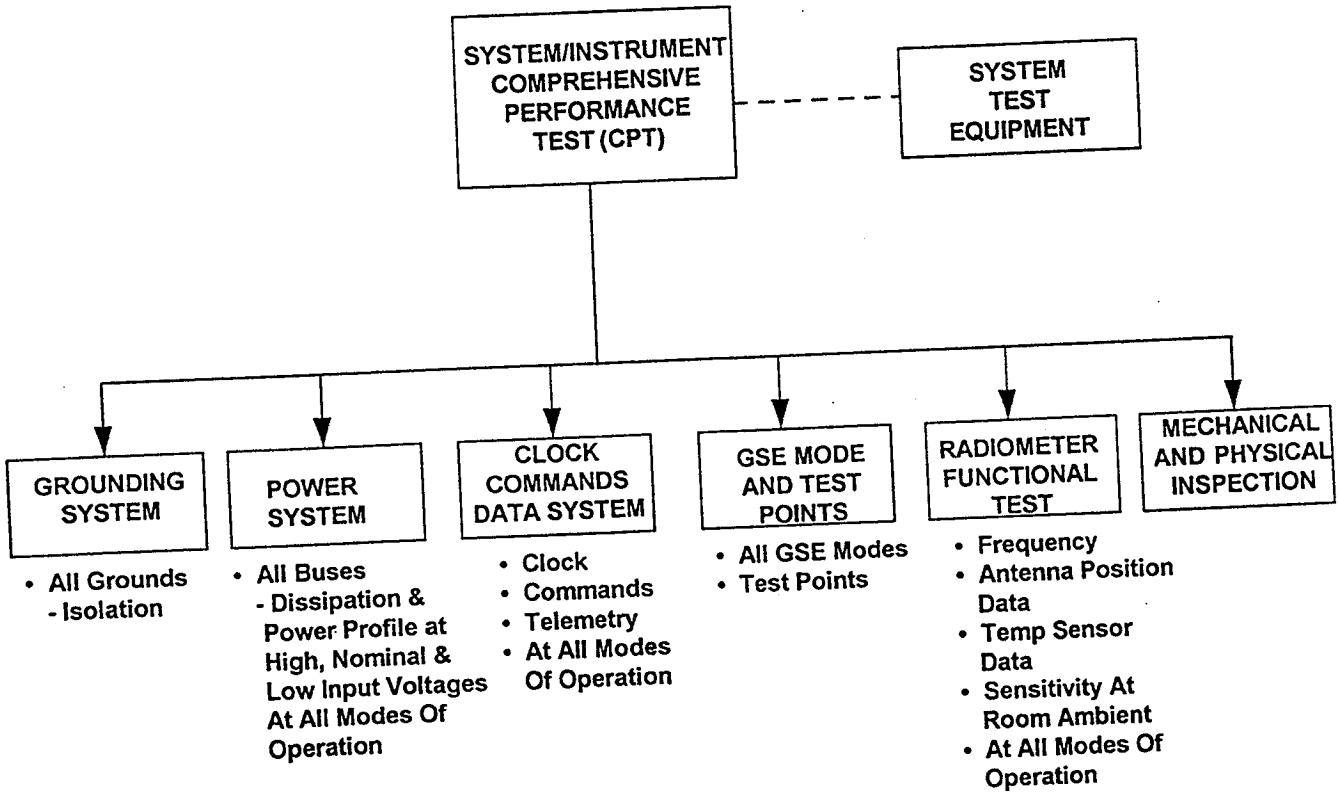

Figure 8 Instrument Comprehensive Performance Test

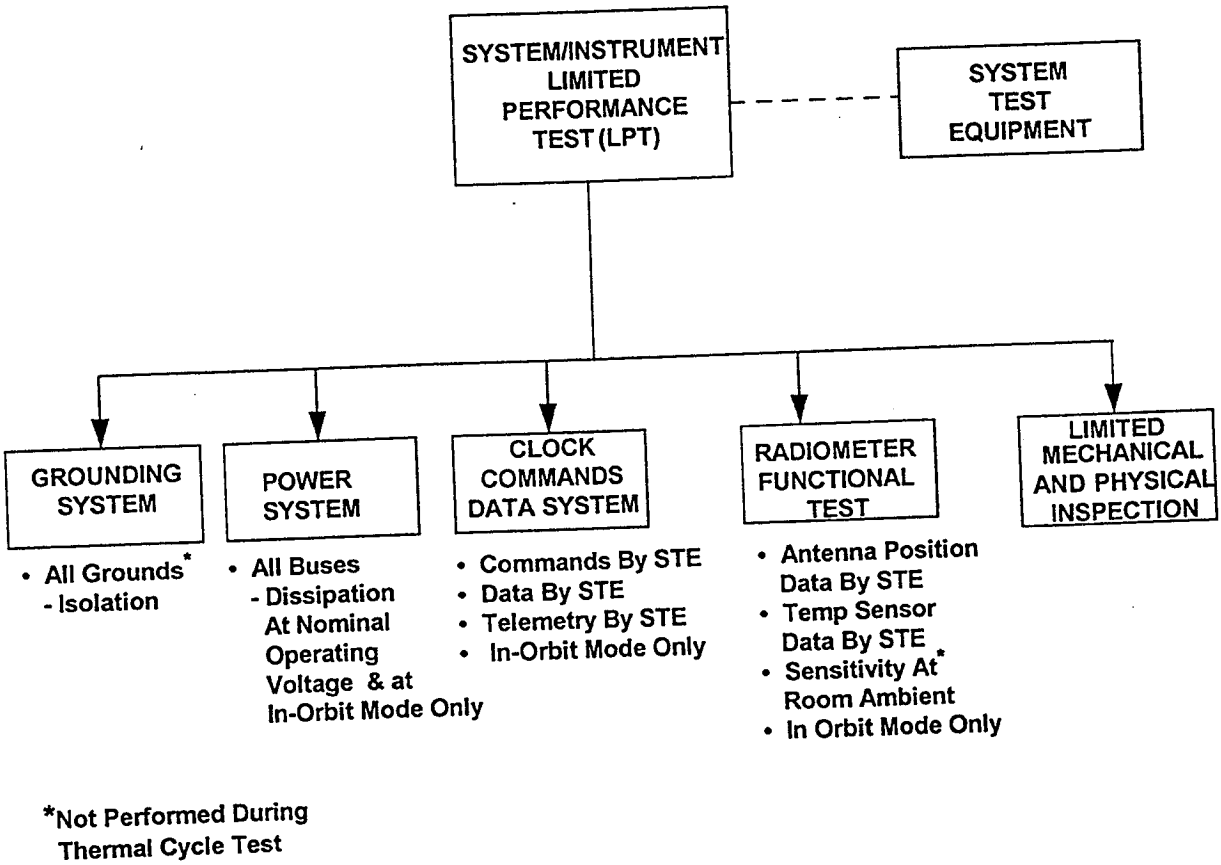

Figure 9 Instrument Limited Performance Test

4.1.3 Ground Support Equipment Test Flow

Ground Support Equipment Verification requirements are provided in the AMSU-A Ground Support Equipment Specification.

Self-test programs will be exercised, and the data produced by the data processing equipment will be compared with the expected results to verify their proper operation.

All significant AMSU-A signals can be displayed on the CRT by selecting them from the operator console. The input power will be measured by calibrated voltmeters.

The blackbody calibration targets will be inspected to verify that they are properly located to fill the instrument's field of view and are isolated from the instrument. The calculations of their effective emissivity will be provided for verification of the emissivity requirement. Their temperature accuracy and gradients will be measured to verify specification requirements.

4.1.3.1 Fixtures and Containers - Handling fixtures will be verified by proof tests as specified in the PAR. Test fixtures and shipping containers will be verified by inspection of the hardware versus the engineering drawings to which they were built.

Section 5

PERFORMANCE VERIFICATION MATRIX

This section presents a AMSU-A Performance Verification Matrix. The matrix is shown in Table I. It will be used throughout the program for identifying verification needs and tracking verification activities.

Performance and Operation Specification S-480-80

Table V Verification Matrix

POS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Protoflight	Flight	
3.0	Performance Requirements	X										
3.1	Operational Requirements	X										
3.1.1	Nominal Orbital Parameters	X										
3.1.2	Operational Modes	X										
3.2	Channel Assignments/Requirements					X	X		X	X	X	AE-26002/6 & AE-26516/1/2/7/8
3.2.1	Center Frequency					X	X		X	X	X	AE-26002/6 & AE-26516/1/2/7/8
3.2.2	Channel Bandwidth					X	X			X	X	AE-26002/6
3.2.3	Out-of-Band Rejection					X	X			X	X	AE-26002/6
3.2.4	Stop-bands	X										
3.2.5	Receiver Subsystem Implementation					X	X			X	X	AE-26002/6
3.2.6	Gain Stability				X	X	X			X	X	AE-26002/6
3.2.7	Center Frequency Stability								X			AE-26156/3/4/9/10
3.3	Sample Period and Integration Time					X			X	X	X	AE-26156/5/6/11/12
3.4	Temperature Sensitivity - NEΔT	X										
3.5	Calibration				X	X	X		X	X	X	AE-26156/5/6/11/12
3.5.1	In-Flight Calibration											

Performance and Operation Specification S-480-80

POS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Protoflight	Flight	
3.5.2	Calibration Accuracy and Repeatability	X										
3.5.2.1	General					X			X	X	X	AE-26156/5/6/11/12
3.5.2.2	Analyses				X				X	X	X	AE-26156/5/6/11/12
3.5.2.3	Calibration Algorithm				X				X	X	X	CAL. LOG BOOK
3.6	System Dynamic Range and Linearity					X			X	X	X	AE-26156/5/6/11/12 & CAL. LOG BOOK
3.7	Antenna System	X										
3.7.1	Beamwidth					X		X		X	X	AE-26002/4
3.7.2	Polarization					X		X		X	X	AE-26002/4
3.7.3	Beam Scanning	X										AE-26002/4
3.7.3.1	Cross-Track Scan		X	X				X		X	X	AE-26002/4
3.7.3.2	Scan Motion and Pattern		X			X		X		X	X	AE-26002/4
3.7.3.3	Scan Synchronization					X		X	X	X	X	AE-26002/1/2
3.7.3.4	Beam Pointing Accuracy					X		X		X	X	AE-26002/4
3.7.3.5	Beam Efficiency				X	X		X		X	X	AE-26002/4
3.8	Analog-to-Digital Electronics	X										
3.8.1	General					X	X	X	X			AE-26156/1/2/7/8

Performance and Operation Specification S-480-80

POS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Protoflight	Flight	
3.8.2	Multiplexer					X		X		X	X	AE-26659
3.8.3	Analog-to-Digital Converter					X		X		X	X	AE-26659
3.8.4	Independence of Measurements of Each Channel					X		X		X	X	AE-26659
3.9	Hardware Model Requirements	X										
3.9.1	Protoflight Model		X							X		Shop Order
3.9.2	Flight Model		X								X	Shop Order
3.9.3	Drill Template		X	X			X					Shop Order
3.10	Math Model Requirements	X										
3.10.1	Radiometric Math Model				X							CDRL 101
3.10.2	Structural Math Models				X							CDRL 102
3.10.3	Thermal Analytical Models				X							CDRL 103
4.0	AMSU-A Implementation	X										
4.1	General	X										
4.2	Life				X		X		X			Report #9831
4.2.1	Storage Life				X		X		X			Report #9831
4.2.2	Mission Life				X		X		X			Report #9831

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POS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
4.3	Single-Point Failures				X				X			REPORT # 10378
4.4	Electrical Requirements	X										
4.4.1	Grounding and Shielding		X			X			X	X	X	AE-26156/1/2/7/8
4.4.2	Connector Requirements		X	X		X			X	X	X	AE-26156/3/4/9/10
4.4.3	Power System					X	X		X	X	X	AE26156/3/4/9/10
4.4.4	AMSU-A Clock and Command Requirements					X			X	X	X	AE26156/3/4/9/10
4.4.5	Data System					X			X	X	X	AE26156/3/4/9/10
4.4.6	Test Points					X			X	X	X	AE26156/3/4/9/10
4.5	Mechanical Requirements	X										
4.5.1	Mechanical Outline and Weight Limits		X	X		X			X	X	X	Shop Order
4.5.2	Mounting of the AMSU-A		X						X	X	X	Shop Order
4.5.3	Scan Mechanisms	X										AE-26002/1/2
4.5.3.1	Torque Margin				X		X			X	X	AE-26002/1/2
4.5.3.2	Motor Stall Vulnerability				X							REPORT
4.5.3.3	Motor Type		X				X			X	X	AE-26002/1/2
4.5.3.4	Shaft "Encoders"		X			X	X		X	X	X	AE-26002/1/2

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POS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
4.6.2.3	Environmental Fluxes				X				X	X	X	CDRL 103
4.6.3	Design Requirements	X										
4.6.3.1	Nominal Operating Temperatures				X	X			X	X	X	AE-26156/5/6/11/12
4.6.3.2	Nominal Relative Humidity Range											? Ely
4.6.3.3	Survivable Temperature Range				X	X	X		X	X	X	AE-26151/7
4.6.3.4	Standby and Launch Phase Mode Heating			X		X						AE-26151/7
4.6.3.5	Thermal Monitoring					X			X	X	X	AE-26156/3/4/9/10
4.6.3.6	Thermal Interface Control Drawings		X						X	X	X	1356863/1356012
4.7	Electromagnetic Interference				X	X			X	X	X	AE-26151/X
4.8	Space Radiation Dose Level			X								Report
4.9	AMSU-A/Spacecraft Interface	X										
5.0	Ground Support Equipment Requirements	X										
5.1	General	X										
5.2	Special Test Equipment	X										
5.2.1	General	X										
5.2.2	Requirements			X	X	X		X	X			AE-26157/AE-26156

Performance and Operation Specification S-480-80

POS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
5.3	Calibration Test Equipment	X										
5.3.1	General	X										
5.3.2	Blackbody Calibration Targets	X										
5.3.2.1	General	X										
5.3.2.2	Requirements				X	X	X		X			AE-26002/5 & AE-26156/5/6/11/12
5.3.3	Blackbody Spacecraft Test Targets	X										
5.3.3.1	General	X										
5.3.3.2	Requirements				X	X	X					Report
5.3.4	Target Temperature Control Unit	X										
5.3.4.1	General	X										
5.3.4.2	Control Console				X	X	X		X			Report
5.3.4.3	Cables		X									Shop Order
5.4	Handling Fixture		X	X			X		X	X	X	Drawings
5.5	Test Fixtures		X	X			X		X	X	X	Drawings
5.6	Drill Jigs		X	X			X		X	X	X	Drawings
5.7	Shipping/Storage Containers		X						X	X	X	AE-26154/AE-26357

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POS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Protoflight	Flight	
6.0	Performance Assurance Requirements	X										
6.1	General	X										
6.1.1	Test and Calibration Procedure	X										
6.1.2	Documentation of Tests and Calibrations	X										
6.1.3	Performance Checks	X										
6.1.4	Retesting	X										
6.1.5	Limits Programs	X										
6.2	System Performance Test Requirements	X										
6.2.1	General	X										
6.2.2	Functional Test Philosophy	X										
6.2.3	Band-Pass Characteristics					X	X			X	X	E-24937/AE-2486
6.2.4	System Linearity					X	X		X	X	X	AE-26156/5/6/11/12
6.2.5	Temperature Sensitivity - NEΔT					X			X	X	X	AE-26156/5/6/11/12
6.2.6	Antenna Pattern Measurements	X										
6.2.6.1	Pattern Center Frequency					X		X		X	X	AE-26002/4
6.2.6.2	Dynamic Range and Amplitude Accuracy				X	X						AE-26002/4

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POS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Protoflight	Flight	
6.2.6.3	Number of Planes					X		X		X	X	AE-26002/4
6.2.6.4	Measurement Polarization					X		X		X	X	AE-26002/4
6.2.6.5	Angular Range and Interval					X		X		X	X	AE-26002/4
6.2.6.6	Beam Positions Required					X		X		X	X	AE-26002/4
6.2.6.7	Tunable Short Test					X		X		X		AE-26002/4
6.2.7	Results of Tests	X										
6.2.8	Miscellaneous Test Requirements	X										
6.2.8.1	Life Testing	X										
6.2.8.2	Spacecraft Integration Test	X										
6.3	System Calibration Requirements	X										
6.3.1	General	X										
6.3.2	Results of Calibrations					X			X	X	X	AE-26156/5/6/11/12
6.3.3	System Calibration Test Requirements	X				X			X	X	X	AE-26156/5/6/11/12
6.3.3.1	General					X			X	X	X	AE-26156/5/6/11/12
6.3.3.2	Special Test Requirements					X			X	X	X	AE-26156/5/6/11/12
6.4	System Qualification/Acceptance Requirements	X										

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POS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
7.0	Software Requirements	X										
7.1	General		X						X	X	X	CDRL 008
7.2	Instrument Flight Software/Firmware					X			X	X	X	CDRL 306
7.3	In-Flight Operations Software					X			X			AE-26602
7.4	Instrument Ground Software					X			X			AE-26602
7.5	Command List and Description		X						X	X	X	CDRL 303
7.6	Software					X			X	X	X	AE-26156/5/6/11/12

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UIID Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
5.0 (16)	Survivel Heater Redundancy		X	X					X	X	X	Shop Order
5.0 (17)	Instrument Mounting Orientation	X										
5.0 (18)	EMI/EMC Requirements	X										
5.0 (19)	RE03 Testing					X	X			X		AE-26151/5
5.0 (20)	Alignment Cube Location		X						X	X	X	Shop Order
5.0 (21)	Verification Limit Loads				X	X			X	X	X	AE-26151/1
5.0 (22)	CE06 Testing											AE-26151/5
5.0 (23)	RE02 Testing											AE-26151/5
5.0 (24)	RE02 Special Frequency Testing											AE-26151/5

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
3.0	Mechanical Requirements	X										
3.1	Instrument Envelopes	X										
3.11	Instrument Launch Mode Envelope	X										
3.1.2	Instrument On-Orbit Envelope	X										
3.1.3	Instrument Envelope Documentation	X										
3.2	Fields of View	X										
3.2.1	Fields of View Allocation	X							X	X	X	
3.3	Mass Properties	X										
3.3.1	Instrument Mass Allocation	X										
3.3.2	Instrument Mass Documentation					X			X	X	X	Shop Order
3.3.3	Instrument Mass Variability	X										
3.3.3.1	Instrument Mass Variability Documentation	X			X							
3.3.3.2	Center of Mass Measurement and Documentation				X				X	X	X	Shop Order
3.3.4	Moments of Inertia	X										
3.3.4.1	Moments of Inertia Accuracy				X				X	X	X	Shop Order
3.3.4.2	Moments of Inertia Documentation	X										

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
3.3.4.3	Moments of Inertia Variation Documentation	X										
3.4	Mounting	X										
3.4.1	Mounting Method	X										
3.4.1.1	Kinematic Mount Requirement	X										
3.4.2	Mounting Interface	X										
3.4.2.1	Mounting Interface Documentation	X										
3.4.2.2	Mounting Hole Coordinates and Dimensions	X										
3.4.2.3	Mounting Hole Position and Tolerance		X	X					X	X	X	Shop Order
3.4.3	Mounting Hardware	X										
3.4.3.1	Mounting Hardware Provider	X										
3.4.3.2	Kinematic Mount Provider	X										
3.4.3.3	Mounting Hardware Documentation	X										
3.4.3.4	Mounting Surface Requirements	X										
3.4.3.5	Shims	X										
3.4.3.6	Mounting Fasteners	X										
3.4.4	Mounting Location	X										

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
3.4.4.1	Instrument Mounting Location											
3.4.4.2	Mounting Location Documentation											
3.4.5	Drill Templates	X										
3.4.5.1	Drill Template Usage		X						X	X	X	Shop Order
3.4.5.2	Drill Template Fabrication Requirements	X										
3.4.5.3	Drill Template Provider		X									Shop Order
3.5	Alignment	X										
3.5.1	Optical Cube Requirements		X				X					Shop Order
3.5.1.1	Optical Cube Surface Area		X				X			X	X	Shop Order
3.5.1.2	Optical Cube Surface Orthogonality		X				X			X	X	Shop Order
3.5.1.3	Optical Cube Documentation		X				X			X	X	Shop Order
3.5.1.4	Optical Cube Quality		X				X			X	X	Shop Order
3.5.1.5	Optical Cube Cover		X				X			X		Shop Order
3.5.2	Interface Alignment Cube (IAC)		X							X	X	Shop Order
3.5.3	Alignment Parameters				X	X		X		X	X	AE-26155
3.5.4	Alignment Responsibilities	X										

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
3.5.5	Alignment Angles	X										
3.5.6	Pointing Definitions	X										
3.5.6.1	Pointing Accuracy	X										
3.5.6.2	Pointing Knowledge (Real Time or Post-processed)	X										
3.5.6.3	Pointing Stability	X										
3.6	General Structural Design Requirements	X										
3.6.1	Structural Support	X										
3.6.2	Instrument Structural Dynamics	X										
3.6.2.1	Minimum Fixed-Base Frequency					X			X	X	X	AE-26151/1
3.6.2.2	Low Mass Component Fixed-Base Frequency				X				X	X	X	CDRL 113
3.6.3	Interface Design Limit Loads Requirements	X										
3.6.3.1	Limit Loads Application				X				X	X	X	CDRL 113
3.6.3.2	Limit Loads Application Axis				X				X	X	X	CDRL 113
3.6.3.3	Interface Limit Loads				X				X	X	X	CDRL 113
3.6.3.3.1	Design Limit Loads				X				X	X	X	CDRL 113
3.6.3.3.2	Qualification Loads				X				X	X	X	CDRL 113

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
3.6.4	Combined Structural Dynamics Analysis	X										
3.6.4.1	Combined Structural Dynamics Analysis Responsib	X										
3.6.4.2	Combined Structural Dynamics Analysis Results	X										
3.6.4.3	Coupled Loads Analysis Results	X										
3.6.5	Pressurized System Design				X				X	X	X	CDRL 113
3.7	Finite Element Model				X				X	X	X	CDRL 102
3.8	Instrument Mass Model	X										
3.9	Instrument Mechanisms	X										
3.9.1	Caging During Test and Launch	X										
3.9.2	Captive Hardware		X						X	X	X	Shop Order
3.10	Instrument Disturbance Allocations	X										
3.10.1	Constant Disturbance Torque Limits				X				X			Report
3.10.2	Periodic Disturbance Torque Limits				X				X			Report
3.10.3	Periodic Disturbance Torque Limits for Linear Forces				X				X			Report
3.10.4	Torque Profile Documentation	X										
3.10.5	Thrust Direction Definition	X										

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
3.10.5.1	Angular Momentum	X										
3.10.5.1.1	Allowable Angular Momentum				X				X			Report
3.10.5.1.2	Angular Momentum Documentation	X										Shop Order
3.11	Access	X										
3.11.1	Access Identification	X										
3.11.2	General Access		X						X	X	X	Shop Order
3.12	Handling Fixtures					X	X			X	X	AE-26196
3.13	Mounting Orientation		X						X	X	X	1356863/1356012
3.14	Instrument Spacecraft I&T Mounting		X						X	X	X	1356863/1356012
3.15	Non-Flight Equipment	X										
3.16	Launch Site Equipment Installation and Removal	X										
3.16.1	Non-Flight Equipment		X						X	X	X	Shop Order
3.16.2	Flight Equipment		X						X	X	X	Shop Order
4.0	Thermal Requirements	X										
4.1	Thermal Interface Description	X										CDRL 516
4.2	Thermal Design	X										

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
4.2.1	Instrument Thermal Design				X	X			X	X	X	CDRL 103
4.2.2	Instrument Survival				X				X	X	X	CDRL 103
4.3	Heat Transfer	X										
4.3.1	Heat Transfer to Spacecraft				X				X	X	X	CDRL 103
4.3.2	Segregation of Instrument Heat Sources	X										
4.3.3	Location of Thermal Control Hardware	X										
4.3.4	Environmental Heat Transfer				X				X	X	X	CDRL 103
4.4	Temperature	X										
4.4.1	Spacecraft Temperature Range				X				X	X	X	CDRL 103
4.4.2	Instrument Temperature Range	X										
4.50	Temperature Monitoring	X										
4.5.1	Mechanical Mounting Interface Temperature Monito	X										
4.5.2	Instrument Temperature Monitoring					X						Ae-26156
4.5.3	Temperature Sensor Location		X									Shop Order
4.6	Thermal Hardware	X										
4.6.1	Survival Heaters		X									Shop Order

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
4.6.1.1	Survival Heater Responsibility	X										
4.6.1.2	Survival Heater Control		X									Shop Order
4.6.1.3	Survival Heater Power					X			X	X	X	AE-26151/7
4.6.2	Thermal Control Hardware	X										
4.6.2.1	Thermal Control Hardware Responsibility		X									Shop Order
4.6.2.2	Thermal Control Hardware Documentation	X										
4.7	Thermal Models	X										
4.7.1	Surface Models				X				X	X	X	CDRL 103
4.7.2	Reduced Node Thermal Math Model				X				X	X	X	CDRL 103
4.7.3	Detailed Thermal Math Model				X				X	X	X	CDRL 103
5.0	Electrical Interface Requirements	X										
5.1	Electrical Interface Requirements	X										
5.1.1	Electrical Interfaces					X			X	X	X	AE-26156/9/10
5.1.2	Electrical Interface Definitions	X										
5.1.2.1	Power Interface					X			X	X	X	AE-26156/9/10
5.1.2.2	Quiet Power Bus					X			X	X	X	AE-26156/9/10

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
5.1.2.3	Noisy Power Bus					X			X	X	X	AE-26156/9/10
5.1.2.4	Survival Heater Power Bus					X			X	X	X	AE-26156/9/10
5.2	Power Specifications					X			X	X	X	AE-26156/9/10
5.2.1	Instrument Power Harness		X						X	X	X	Shop Order
5.2.2	Average and Peak Power Consumption					X			X	X	X	AE-26156/9/10
5.2.3	Allocation of Instrument Power					X			X	X	X	AE-26156/9/10
5.2.4	Instrument Power-Level Documentation	X										
5.2.5	Power Characteristics					X			X	X	X	AE-26156/9/10
5.2.5.1	Voltage					X			X	X	X	AE-26156/9/10
5.2.5.1.1	Primary Instrument Voltage					X			X	X	X	AE-26156/9/10
5.2.5.1.2	Unannounced Removal of Power					X			X	X	X	AE-26156/9/10
5.2.5.1.3	Input Ripple					X			X	X	X	AE-26156/9/10
5.2.5.1.4	Abnormal Operation Steady-State Voltage Limits					X			X	X	X	AE-26156/9/10
5.2.5.1.5	Power Source Impedance					X			X	X	X	AE-26156/9/10
5.2.5.2	Current					X			X	X	X	AE-26156/9/10
5.2.5.2.1	Instrument Turn-on-Transients					X			X	X	X	AE-26156/9/10

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
5.2.5.2.2	Instrument Turn-off Transients					X			X	X	X	AE-26156/9/10
5.2.5.2.3	Instrument Operational Transients					X			X	X	X	AE-26156/9/10
5.2.5.2.4	Instrument Reflected Ripple Current					X			X	X	X	AE-26156/9/10
5.2.5.2.5	Overcurrent Protection	X										
5.2.5.2.5.1	Overcurrent Protection Device Size	X										
5.2.5.2.5.2	Overcurrent Protection Device Size Documentation	X										
5.2.5.2.5.3	Instrument Internal Overcurrent Protection (none in AMSU-A)			X								
5.2.6	Power Control	X										
5.2.6.1	Power Connections					X			X	X	X	AE-26156/9/10
5.2.6.2	Instrument High-Voltage Restriction					X			X	X	X	AE-26156/9/10
5.2.6.3	Documentation of Instrument High-Voltage Restricti	X										
5.3	Grounds, Returns and References	X										
5.3.1	Grounding Responsibility					X			X	X	X	AE-26156/9/10
5.3.1.1	Power Harnessing	X										
5.3.1.1.1	Power Routing and Shielding	X										
5.3.2	Power Leads and Returns					X			X	X	X	AE-26156/9/10

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
5.3.2.1	Power Shield Bonding		X						X	X	X	Shop Order
5.3.2.1.1	Isolation					X			X	X	X	AE-26156/9/10
5.3.2.1.2	Power Input Isolation					X			X	X	X	AE-26156/9/10
5.3.2.1.3	Primary Power Isolation					X			X	X	X	AE-26156/9/10
5.3.2.1.4	Secondary Power Isolation					X			X	X	X	AE-26156/9/10
5.3.2.2	Power Reference	X										
5.3.2.2.1	Primary Power Reference	X										
5.3.2.2.2	Secondary Power Return					X			X	X	X	AE-26156/9/10
5.3.2.2.3	Secondary Power Reference					X			X	X	X	AE-26156/9/10
5.3.2.2.4	Isolated Secondary Referencing					X			X	X	X	AE-26156/9/10
5.3.3	Signal Reference					X			X	X	X	AE-26156/9/10
5.3.3.1	Signal Reference Connectivity					X			X	X	X	AE-26156/9/10
5.3.3.2	Signal Reference Constraints					X			X	X	X	AE-26156/9/10
5.3.4	Chassis Ground	X										
5.3.4.1	Instrument Ground Plane	X										
5.3.4.2	Component Grounding					X			X	X	X	AE-26156/9/10

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
5.3.4.2.1	Component Ground Location	X										
5.3.4.2.2	Component Ground Connection	X										
5.3.4.2.3	Component Bonding Straps	X										
5.3.4.3	Connector Grounding					X			X	X	X	AE-26156/9/10
5.3.4.4	Chassis Ground Current					X			X	X	X	AE-26156/9/10
5.3.4.5	External Ground Tie Point		X						X	X	X	
5.3.5	Signal Reference Plane											
5.3.5.1	Instrument Ground Plane Connection	X										Shop Order
5.3.5.2	Thermal Blanket Grounding					X	X			X	X	Shop Order
5.3.5.2.1	Thermal Blanket Layer Interconnection		X			X	X			X	X	Shop Order
5.3.5.2.2	Thermal Blanket Chassis Grounding		X			X			X	X	X	Shop Order
5.4	Harnesses	X										
5.4.1	Harnesses Provider	X										
5.4.2	Harness Hardware Documentation	X										
5.4.3	Harness Wiring Requirements	X										
5.4.4	Tie Points	X										

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
5.4.4.1	Tie Point Locations and Provider	X										
5.4.4.2	Tie Point Documentation	X										
5.4.5	Connectors	X										
5.4.5.1	Connector Clearance		X						X	X	X	Shop Order
5.4.5.2	Connector Location and Types	X										
5.4.5.3	Keying		X						X	X	X	Shop Order
5.4.5.4	Interface Connector Provider	X										
5.4.5.4.1	Harness Connectors	X										
5.4.5.4.2	Instrument Component Connectors		X						X	X	X	Shop Order
5.4.5.4.3	Connector Types		X						X	X	X	Shop Order
5.4.5.4.4	Connector Type Documentation	X										
5.4.5.5	Flight Plugs	X										
5.4.5.5.1	Flight Plug Installation	X										
5.4.5.5.2	Flight Plug Responsibility	X										
5.4.5.5.3	Flight Plug Documentation	X										
5.4.5.6	Connector Protective Covers								X	X	X	Shop Order

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
5.4.5.7	Test Connectors	X										
5.4.5.7.1	Test Connector Accessibility	X										
5.4.5.7.2	Test Connector Documentation	X										
5.4.5.8	Breakout Boxes	X										
5.4.5.9	Buffer Connectors and Connector Savers	X										
5.4.5.9.1	Connector Saver Utilization		X						X	X	X	Shop Order
5.4.5.9.2	Connector Saver Provider	X										
5.4.5.10	Electrical Connector Constraints		X						X	X	X	Shop Order
5.5	Electro-Explosive Devices (EEDs)	X										
5.5.1	Electro-Explosive Device Interface	X										
5.5.2	Selection of Devices	X										
5.5.3	Electro-Explosive Device Characteristics	X										
5.5.3.1	Electro-Explosive Device Current Load	X										
5.5.3.2	Electro-Explosive Device Use	X										
5.5.4	Safety Short	X										
5.5.5	Intra-Instrument Cabling	X										

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
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5.5.6	Electro-Explosive Device Circuitry Protection	X										
5.5.7	Electro-Explosive Device Isolation	X										
5.5.8	Arming and Disarming	X										
5.5.9	Electro-Explosive Device Testing	X										
5.5.9.1	Electro-Explosive Device Circuitry Test Capability	X										
5.5.9.2	Electro-Explosive Device Test Capability	X										
5.6	Test Points	X										
5.6.1	Test Point Interfaces	X										
5.6.2	Test Point Interface Documentation	X										
5.7	Spacecraft/Instrument Interface Simulator	X										
6.0	Command and Handling Requirements	X										
6.1	Instrument Modes					X						AE-26156/9/10
6.1.1	Instrument Off Mode					X						AE-26156/9/10
6.1.2	Instrument Survival Mode					X						AE-26156/9/10
6.1.3	Instrument Operational Mode(s)					X						AE-26156/9/10
6.1.4	Instrument Mode Documentation	X										

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
6.2	General Electrical Interface Requirements											
6.2.1	Interface Conductors		X	X					X	X	X	Shop Order
6.2.2	Interface Circuitry Isolation					X			X	X	X	Shop Order
6.2.3	Interface Fault Tolerance				X							Report
6.3	Passive Analog Telemetry					X			X	X	X	AE-26156/9/10
6.3.1	Number of Passive Analog Telemetry Channels					X			X	X	X	AE-26156/9/10
6.3.2	Passive Analog Telemetry Signal Characteristics					X			X	X	X	AE-26156/9/10
6.4	Digital Data Convention					X			X	X	X	AE-26156/9/10
6.5	Command and Telemetry Bus Requirements	X										
6.5.1	Bus Functions					X			X	X	X	AE-26156/9/10
6.5.2	Bus Type					X			X	X	X	AE-26156/9/10
6.5.3	Bus Configuration					X			X	X	X	AE-26156/9/10
6.5.4	Number of Functionally Distinct Instrument Remote Terminals					X			X	X	X	AE-26156/9/10
6.5.5	General Bus Requirements											
6.5.5.1	Electrical Interface					X			X	X	X	AE-26156/9/10
6.5.5.2	Mode Codes					X			X	X	X	AE-26156/9/10

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
6.5.5.3	Status Word					X			X	X	X	AE-26156/9/10
6.5.5.4	Instrument RT Address Assignment					X			X	X	X	AE-26156/9/10
6.5.5.5	Instrument RT Subaddress Assignment					X			X	X	X	AE-26156/9/10
6.5.5.6	Data Wrap Around					X			X	X	X	AE-26156/9/10
6.5.5.7	Automatic Retry					X			X	X	X	AE-26156/9/10
6.5.5.8	Data Buffering					X			X	X	X	AE-26156/9/10
6.5.5.9	Remote Terminal Self Test					X			X	X	X	AE-26156/9/10
6.5.5.10	Instrument Timeout					X			X	X	X	AE-26156/9/10
6.5.5.11	Illegal Command Monitoring By Instrument RT					X			X	X	X	AE-26156/9/10
6.5.6	Instrument Commands and Memory Load	X										
6.5.6.1	Packetization for Commands and Memory Loads					X			X	X	X	AE-26156/9/10
6.5.6.2	Command and Memory Load Packet Length					X			X	X	X	AE-26156/9/10
6.5.6.3	Documentation	X										
6.5.6.4	Commands and Memory Loads Transfer					X			X	X	X	AE-26156/9/10
6.5.6.5	Command Constraints	X										
6.5.6.5.1	Toggle Commands					X			X	X	X	AE-26156/9/10

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
6.5.6.5.2	Critical Commands	X										
6.5.6.5.3	Bit Encoded Commands					X						AE-26156/9/10
6.5.6.5.4	Override of Automatically Triggered Functions					X						AE-26156/9/10
6.5.6.5.5	Command Sequence					X						AE-26156/9/10
6.5.6.5.6	Command Execution Verification					X						AE-26156/9/10
6.5.7	Time Marks and Time Code Data	X										
6.5.7.1	Time Mark Transfer					X						AE-26156/9/10
6.5.7.2	Time Code Data					X						AE-26156/9/10
6.5.7.2.1	Time Code Data Format					X						AE-26156/9/10
6.5.7.2.2	Time Code Data Transfer					X						AE-26156/9/10
6.5.7.2.3	Time Code Data Accuracy					X						AE-26156/9/10
6.5.7.2.4	Time Code Data Epoch					X						AE-26156/9/10
6.5.7.3	Missing Time Marks and Time Code Data					X						AE-26156/9/10
6.5.8	Instrument Engineering Data											
6.5.8.1	Definition of Instrument Engineering Data	X				X						AE-26156/9/10
6.5.8.2	Engineering Data Packetization					X						AE-26156/9/10

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
6.5.8.3	Engineering Data Constraints	X										
6.5.8.3.1	Content and Structure					X			X	X	X	AE-26156/9/10
6.5.8.3.2	Engineering Data Rate and Packet Size					X			X	X	X	AE-26156/9/10
6.5.8.3.3	Critical Engineering Data					X			X	X	X	AE-26156/9/10
6.5.8.4	Engineering Data Transfer					X			X	X	X	AE-26156/9/10
6.5.8.5	Sampling Rate, Data Transfer Cycle and Time Gap					X			X	X	X	
6.5.9	Low Rate Science Data	X										
6.5.9.1	Definition of Low Rate Science Data	X										
6.5.9.2	Low Rate Science Data Rate Allocation	X				X			X	X	X	AE-26156/9/10
6.5.9.3	Low Rate Science Data Packetization					X			X	X	X	AE-26156/9/10
6.5.9.4	Packet Segmentation					X			X	X	X	AE-26156/9/10
6.5.9.5	Low Rate Science Data Transfer					X			X	X	X	
6.5.9.6	Sampling Rate, Data Transfer Cycle and Time Gap	X										
6.5.10	Instrument Diagnostic Data	X										
6.5.10.1	Definition of Diagnostic Data	X										
6.5.10.2	Diagnostic Data Rate								X	X	X	AE-26156/9/10

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
6.5.10.3	Packetization of Diagnostic Data					X			X	X	X	AE-26156/9/10
6.5.10.4	Low Science Rate Instrument Diagnostic Data Transfer					X			X	X	X	AE-26156/9/10
6.6 - 6.6.10	High Rate Data Link					X			X	X	X	AE-26156/9/10
7.0	Contamination	X										
7.1	Contamination Control Requirements	X										
7.1.1	Documentation Requirements	X										
7.1.2	Verification of Cleanliness					X			X	X	X	Shop Order
7.2	Instrument Sources of Contamination	X										
7.3	Instrument Venting	X										
7.3.1	Instrument Venting Documentation	X										
7.3.2	Location of Vent Path	X										
7.3.3	Sealed Hardware	X										
7.4	Protective Covers		X						X	X	X	Shop Order
7.4.1	Responsibility for Covers	X										
7.5	Instrument Purge Requirements	X										
7.6	Instrument Inspection and Cleaning During I&T	X										

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
7.7	Contamination Analysis Requirements				X				X			CDRL 007
7.8	Spacecraft Contractor Supplied Analysis Inputs	X										
7.9	Atomic Oxygen Contamination				X							CDRL 007
7.10	Particulate and Molecular Cleanliness				X							CDRL 007
7.11	GSE Cleanliness Requirements		X									Shop Order
8.0	Software and EGSE Requirements	X					X					
8.1	Use of Operations Science Instrument Support (OASIS)											CDRL 306
8.2	Software Programming Language Requirements											CDRL 306
8.3	Instrument Flight Software Requirements		X									CDRL 306
8.3.1	Instrument Flight Software Version Control		X									CDRL 306
8.3.2	Instrument Flight Software Load		X									CDRL 306
8.3.3	Instrument Flight Software On-Orbit Installation and Verification				X				X	X	X	CDRL 033
8.4	Instrument Ground Support Equipment Software Requir	X										CDRL 306
8.5	Instrument GSE to Spacecraft I&T GSE Interface	X										
9.0	Spacecraft Reference Coordinate Frame	X										
9.1	Nominal Orbit	X										

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Protoflight	Flight	
10.0	Environmental Requirements	X										
10.1	Random Vibration					X			X	X	X	AE-26151/1
10.2	Sine Vibration					X			X	X	X	AE-26151/1
10.2.1	Design Strength Qualification					X			X	X		AE-26151/1
10.3	Acceleration					X			X	X	X	AE-26151/1
10.4	Shock					X			X	X	X	AE-26151/1
10.5	Launch Pressure Profile				X				X			Report
10.6	Acceptance Level Acoustics				X				X			Report
10.7	Qualification/Protoflight Level Acoustics				X				X			Report
10.8	Total Ionizing Dose Radiation Environment				X				X			Report
10.9	Cosmic Ray and High Energy Proton Environment				X				X			Report
10.9.1	Single Events Radiation Environment				X				X			Report
10.9.1.1	Galactic Cosmic Ray Linear Energy Transfer (LET) Spectrum				X				X			Report
10.9.1.2	High Energy Proton Fluence				X				X			Report
10.9.1.3	Peak Fluxes				X				X			Report
10.9.2	Displacement Damage				X				X			Report

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
10.10	Atomic Oxygen				X				X			Report
10.11	EMI/EMC and Magnetic Requirements	X										
10.11.1	Conducted Emission, Power Leads (CE01/CE03)					X	X		X	X	X	AE-26151/5
10.11.2	Conducted Emission, Antenna Terminal (CE06)											
10.11.3	Conducted Susceptibility, Power Leads (CS01/CS02)					X	X		X	X	X	AE-26151/5
10.11.4	Conducted Susceptibility, Spike, Power Leads (CS06)					X	X		X	X	X	AE-26151/5
10.11.5	Radiated Emission, Magnetic Field	X										
10.11.5.1	Radiated AC Magnetic Field Emissions (RE01/RE04)					X	X		X	X	X	AE-26151/5
10.11.5.2	Radiated DC Magnetic Field Emission					X	X		X	X	X	AE-26151/5
10.11.5.3	Magnetic Fields Documentation				X	X	X		X	X	X	AE-26151/5
10.11.6	Radiated Emission, Electric Field (RE02)	X										
10.11.6.1	Narrowband Emission					X	X		X	X	X	AE-26151/5
10.11.6.2	Broadband Emission					X	X		X	X	X	AE-26151/5
10.11.7	Radiated Susceptibility, Magnetic field	X										
10.11.7.1	Radiated AC Magnetic Field Susceptibility (RS01)					X	X		X	X	X	AE-26151/5
10.11.7.2	Radiated DC Magnetic Field Susceptibility					X	X		X	X	X	AE-26151/5

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GIRD Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
10.11.8	Radiated Susceptibility, Electric Field (RS03)					X	X		X	X	X	AE-26151/5
11.0	Model Requirements and Submittal Details		X						X			CDRL 102
11.1	Finite Element Model Submittal		X						X			CDRL 102
11.1.1	Model Representation		X						X			CDRL 102
11.1.2	Finite Element Model (FEM) Requirements		X						X			CDRL 102
11.1.3	Deliverable NASTRAN Model Data		X						X			CDRL 102
11.1.4	Deliverable Model Validity Checks		X						X			CDRL 102
11.1.5	NASTRAN Model Verification		X						X			CDRL 102
11.1.6	Model Delivery Schedule		X						X			CDRL 102
11.2	Thermal Math Model Submittal	X										
11.2.1	Instrument Thermal Math Models				X				X	X	X	CRDL 103
11.2.2	Surface Model Requirements				X				X	X	X	CRDL 103
11.2.3	Reduced Node Thermal Model Requirements											DELETED
11.2.4	Guidelines for the Detailed Instrument Thermal Model				X				X	X	X	CRDL 103

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UIIS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
3.1.3.2	+28V Main Bus					X			X	X	X	AE-26156/3/4
3.1.3.2.1	Power Dissipation					X			X	X	X	AE-26156/3/4
3.1.3.2.4	Transient Loads					X	X		X	X	X	AE-26156/3/4
3.1.3.3	+28V Analog Telemetry Bus					X			X	X	X	AE-26156/3/4
3.1.3.1(5)	Power Dissipation					X			X	X	X	AE-26156/3/4
3.1.3.3.2	Power Limiting	X										
3.1.3.3.3	Transient Loads (GIIS 3.1.3.2.6.3)					X			X	X	X	AE-26156/3/4
3.1.3.4	+28V Pulse Load Bus					X			X	X	X	AE-26156/3/4
3.1.3.1(5)	Power Dissipation					X			X	X	X	AE-26156/3/4
3.1.3.4.3	Transient Loads					X			X	X	X	AE-26156/3/4
3.1.3.5	+10V Interface Bus					X			X	X	X	AE-26156/3/4
3.1.3.1(5)	Power Dissipation					X			X	X	X	AE-26156/3/4
3.1.4	Input Timing & Control Signal					X			X	X	X	AE-26156/3/4
3.1.5.2	Digital A Data					X			X	X	X	AE-26156/3/4
3.1.5.3	Digital B Data					X			X	X	X	AE-26156/3/4
3.1.5.4	Analog Telemetry					X			X	X	X	AE-26156/3/4

Unique Instrument
Interface Specification
IS-2617547 / IS-2624483

UIIS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Protoflight	Flight	
3.1.6	Test Points					X			X	X	X	AE-26156/3/4
3.2.1.1	Demensions		X						X	X	X	Shop Order
3.2.1.2	Weight					X			X	X	X	Shop Order
3.2.1.3	Moments of Inertia				X	X			X	X	X	AE-26151
3.2.1.4	Disturbance Torque				X	X			X	X	X	AE-26151
3.2.1.5	Center of Gravity					X			X	X	X	Shop Order
3.2.2	Instrument Mounting	X										
3.2.2.1	Instrument Mounting Surface		X						X	X	X	Shop Order
3.2.2.2	Mounting Hole Position		X						X	X	X	Shop Order
3.2.4	Field of View	X										
3.2.5	Alignment	X										
3.2.5.1	Referenct Surfaces		X						X	X	X	Shop Order
3.1.2	Connectors	X										
3.1.2.2	Connector Allocation		X						X	X	X	Shop Order
3.1.2.3	Connector Mounting Hardware		X						X	X	X	Shop Order

Unique Instrument Interface Specification IS-2617547 / IS2624483

UIIS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
3.1.2.4	Connector Keying Requirements		X						X	X	X	Shop Order
3.1.2.5	Harness Mating Connectors		X						X	X	X	Shop Order
3.1.2.6	Pin Designations		X						X	X	X	Shop Order
3.1.2.8	Connector Location and Access		X						X	X	X	Shop Order
3.2.6	Protective Cover		X						X			Shop Order
3.2.7	Instrument Materials & Finishes	X										
3.2.8	S/C Harness Clamp Requirements	X										
3.2.9	Marking		X						X			Shop Order
3.3.2	General Requirements	X										
3.3.3	Instrument Temperature Requirements				X	X			X	X	X	CDRL 103
3.3.4	S/C (ESM) Temperature Specifcation				X				X			CDRL 103
3.3.5	Instrument Thermal Control Components	X										
3.3.5.1.1	Surface Finishes		X						X	X	X	Shop Order
3.3.5.1.2	Multilayered Insulation Blankets		X						X	X	X	Shop Order
3.3.5.1.3	Mounting		X						X	X	X	Shop Order
3.3.5.2.3	Survival Heaters					X			X	X	X	AE-26151/7
3.3.5.2.4	Safety Heaters					X			X			AE-26156/1/2

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IS-2617547

GIIS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
3.4.1	Magnetic Characteristics	X										
3.4.2	EMI				X	X			X		X	AE-26151/5
3.5.1	S/C Storage Requirements	X										
3.5.2	S/C Test Requirements	X										
3.5.3	S/C Operational Requirements	X										
4.0	S/C Insrument Integration, Test and Operational Requirements	X										

S/C = Space Craft Level

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IS-3267415

GIIS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
3.1.3.2.4	Over/Under Voltage Survival					X	X			X	X	AE-26156/3/4
3.1.3.2.5	Source Voltage Transient (Operational)					X			X	X	X	AE-26156/3/4
3.1.3.2.6	Instrument Feedback					X			X	X	X	AE-26156/3/4
3.1.3.2.6.1	Load Current Ripple					X			X	X	X	AE-26156/3/4
3.1.3.2.6.2	Load Current Rise Time UIIS-3.1.3.2.4(4)					X			X	X	X	AE-26156/3/4
3.1.3.2.6.3	Transient Load Current					X			X	X	X	AE-26156/3/4
3.1.3.2.6.4	Motor Start Up Current Loads (NA)					X			X	X	X	AE-26156/3/4
3.1.3.2.6.5	Instrument Turn On UIIS 3.1.3.2.4(3) Plus 3.1.3.4.1(3)					X				X	X	AE-26156/3/4
3.1.3.2.6.1	Load Current Ripple					X			X	X	X	AE-26156/3/4
3.1.3.2.6.2	Load Current Rise Time					X			X	X	X	AE-26156/3/4
3.1.3.3.1	Bus Characteristics					X			X	X	X	AE-26156/3/4
3.1.3.2.4	Over/Under Voltage Survival				X					X	X	AE-26156/3/4
3.1.3.2.5	Source Voltage Transient (Operational)					X			X	X	X	AE-26156/3/4
3.1.3.4.4	Over/Under Voltage Survival				X					X	X	AE-26156/3/4
3.1.3.4.5	Source Voltage Transient (Operational)					X				X	X	AE-26156/3/4
3.1.3.4.6	Instrument Feedback (Max. Current Load)					X			X	X	X	AE-26156/3/4

General Instrument
Interface Specification
IS-3267415

GIIS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
3.1.3.4.6.2	Instrument Feedback					X			X	X	X	AE-26156/3/4
3.1.3.5.4	Voltage Transient				X					X	X	AE-26156/3/4
3.1.3.5.5	Load Current Ripple					X			X	X	X	AE-26156/3/4
3.1.3.5.6	Transient Load Currents					X			X	X	X	AE-26156/3/4
3.1.3.5.7	Short Circuit Current Limit					X			X	X	X	AE-26156/1/2
3.1.6.2	Digital Housekeeping Telemetry (Digital B)				X		X			X	X	AE-26156/9/10
3.1.6.3	Analog Housekeeping Telemetry				X		X			X	X	AE-26156/9/10
3.1.6.4	Failure Mode Protection			X			X					Drawing
3.1.6.5	Telemetry Calibration					X				X	X	AE-26156/1/2
3.1.5	Standard Interface Circuits			X			X					Drawing
3.1.5.2	Ground Reference				X		X					Drawing
3.1.5.3	Noise Immunity				X		X					Drawing
3.1.5.4	COS/MOS Compatible Interfaces				X		X					Drawing
3.1.1	Grounds					X			X	X	X	AE-26156/3/4
3.1.2.2	Connector Use and Pin Allocation		X						X	X	X	Shop Order
3.6	Electromagnetic Interface	X										

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IS-3267415

GIIS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
3.6.1.6	Conducted Emission								X	X	X	AE-26151/5
3.6.1.2	Conducted Susceptibility					X			X	X	X	AE-26151/5
3.6.1.3	Conducted Transient Susceptibility					X			X	X	X	AE-26151/5
3.6.1.4	Radiated Emissions					X			X	X	X	AE-26151/5
3.6.1.5	Radiated Susceptibility					X			X	X	X	AE-26151/5
3.2.3.2	Alignment of the Optical Axes		X					X		X	X	Shop Order
3.2.3.3	Alignment Mirrors		X					X		X	X	Shop Order
3.2.3.4.1	Optical Axis to Mounting Hole Pattern		X					X		X	X	Shop Order
3.2.3.4.2	Optical Axis to Alignment Mirrors					X		X		X	X	Shop Order
3.2.3.4.3	Alignment Mirrors to S/C Coordinates	X										
3.2.11	Protective Covers		X						X	X	X	Shop Order
3.5.2	Instrument Generated Magnetic Fields					X			X	X	X	AE-26151/5
3.3.4.1	Finishes		X						X	X	X	Shop Order
3.3.7	Identification and Marking		X						X	X	X	Shop Order
3.3.3.1	Magnetic Materials		X		X		X					NSPAR
3.3.3.2	Outgassing Materials				X		X					NSPAR

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GIIS Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
3.3.5.1	Fungus				X							NSPAR
3.3.5.2	Moisture				X							NSPAR
3.3.6.1	Corrosion				X							NSPAR
3.3.6.2	Electrolytic Corrosion				X							NSPAR
3.2.8	Experiment Load Design	X										
3.2.8.1	Load Paths	X										
3.2.8.2	Load Directions	X										
3.2.8.3	Dynamic Characteristics				X	X			X	X	X	AE-26151/1
3.3.8	Maintainability	X										
3.3.9	Storage		X						X	X	X	CDRL 024
3.3.10	Transportability		X						X	X	X	CDRL 406

Performance Assurance Requirements
S-480-79
(EOS Unique Requirements)

PAR Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
2.3	GSFC Flight Assurance Review Program	X										
3.0	Performance Verification Requirements	X										
3.1	General Requirements	X										
3.2.1	Verification Plan	X										
3.2.2	Verification Specification	X										
3.4	Structural and Mechanical Requirements	X										
3.4.1	General Requirements				X	X			X	X	X	AE-26151/1/CDRL102
3.4.2	Requirements Summary				X	X			X	X	X	AE-26151/1/CDRL103
3.4.3	Structural Loads	X										
3.4.3.1	Verification for Design Qualification					X			X	X	X	AE-26151/1/CDRL102
3.4.3.2	Acceptance Requirements					X			X	X	X	AE-26151/1/CDRL103
3.4.4	Vibroacoustics	X										
3.4.4.1	Verification for Design Qualification				X				X			AE-26151/1/CDRL102
3.4.4.4	Acceptance Requirements				X				X			AE-26151/1/CDRL103
3.4.6	Mechanical Function	X										
3.4.6.1	Verification for Design Qualification				X				X			AE-26151/1/CDRL103

Performance Assurance Requirements
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(EOS Unique Requirements)

PAR Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
3.4.6.2	Acceptance Requirements				X				X			AE-26151/1&CDRL102
6.4.9	Sine Vibration	X										
3.4.9.1	Verification for Design Qualification					X			X	X		AE-26151/1&CDRL102
3.4.9.2	Acceptance Requirements					X			X		X	AE-26151/1&CDRL102
3.5.2	Requirements Summary	X				X						
3.5.2.1	The Range of Requirements					X			X		X	AE-26151/1&CDRL102
3.5.2.2	Basis of the Tests					X			X		X	AE-26151/1&CDRL102
3.6.2	Summary of Requirements											
3.6.3	Thermal Vacuum	X										
3.6.3.1	General Requirements					X			X	X	X	AE-26156/10/11
3.6.3.2	Acceptance Requirements					X			X	X	X	AE-26156/10/11
3.6.4	Thermal Balance				X	X			X	X	X	AE-26151/2
3.7	End-to-End Test Requirements	X										
3.7.1	Compatibility Test	X										
3.7.2	Mission Simulation	X										
5.2.4	Radiation Hardness				X		X			X		Report
9.3	Instrument Cross-Contamination				X							CDRL 007

Performance Assurance Requirements
S-480-79
(METSAT Unique Requirements)

PAR Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto flight	Flight	
2.3	GSFC Flight Assurance Review Program	X										
3.0	Performance Verification Requirements	X										
3.1	General Requirements	X										
3.4	Structural and Mechanical Requirements	X										
3.4.1	General Requirements					X	X		X	X	X	AE-26151/1&CDRL102
3.4.2	Requirements Summary					X	X		X	X	X	AE-26151/1&CDRL102
3.4.3	Structural Loads	X										
3.4.3.1	Verification for Design Qualification					X			X	X	X	AE-26151/1&CDRL102
3.4.3.2	Acceptance Requirements					X			X	X	X	AE-26151/1&CDRL102
3.4.4	Vibroacoustics	X										
3.4.4.2	Random Verification					X			X	X	X	AE-26151/1&CDRL102
3.4.4.3	Acoustics Verification											
3.4.4.4	Acceptance Requirements				X				X	X	X	AE-26151/1&CDRL102
3.4.6	Mechanical Function	X										
3.4.6.1	Verification for Design Qualification					X		X		X	X	AE-26151/1&CDRL102
3.4.6.2	Acceptance Requirements	X										

Performance Assurance Requirements
S-480-79
(METSAT Unique Requirements)

PAR Para.	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
3.5.2	Requirements Summary	X										
3.5.2.1	The Range of Requirements	X										
3.6.3	Thermal Vacuum	X										
3.6.3.1	General Requirements					X			X	X	X	AE-26156/5/6

Performance Assurance Requirements S-480-79

(METSAT Environmental Specifications)

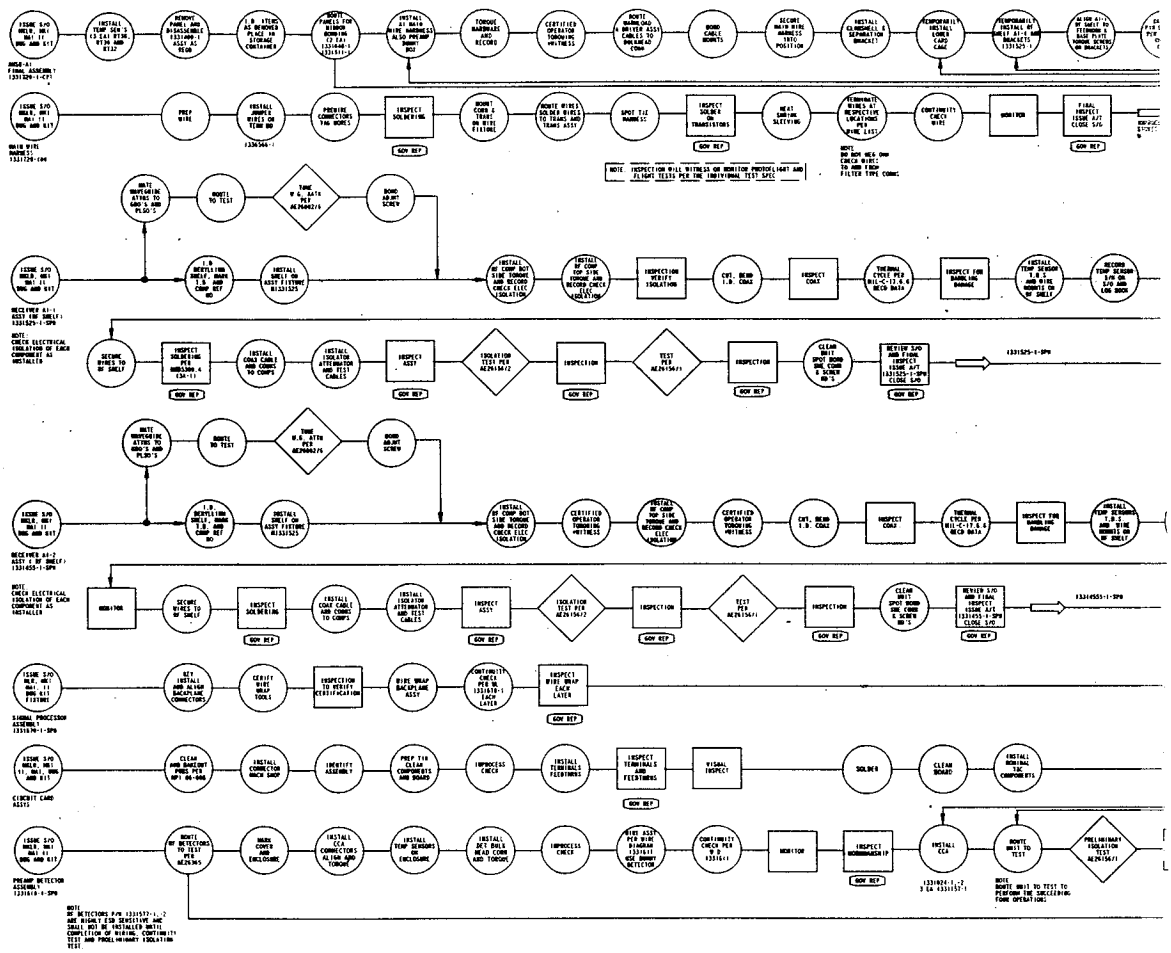
PAR Para. Appendix E	Requirements	Verification Method					Verification Level			Unit		Test Procedures/ Specifications or Analysis Report
		Info Only	Inspection	Design	Analysis	Test	Subassembly	Subsystem	Instrument	Proto Flight	Flight	
1.1	Sine Sweep Test					X			X	X	X	AE-26151/1
1.2	Acceleration Test					X			X	X	X	AE-26151/1
1.3	Random Vibration Tests					X			X	X	X	AE-26151/1
1.4	Launch Phase Pressure Profile				X				X	X	X	Report
1.5	Acoustic Test Requirements				X							Report
1.6	Thermal Vacuum Qualification Test					X			X	X	X	AE-26156/5/6
1.7	Thermal Balance					X			X	X	X	AE-26151/2
1.7.1	Acceptance Requirements					X			X	X	X	AE-26151/2
1.8	Electromagnetic Compatibility					X			X	X	X	AE-26151/5
2.0	Flight Acceptance Testing											
2.1	Sine Sweep Test					X			X	X	X	AE-26151/1
2.2	Random Vibration					X			X	X	X	AE-26151/1
2.3	Acceleration Test (Static Load)					X			X	X	X	AE-26151/1
2.4	Thermal Cycle	X										AE-26151/7
2.4.1	Ambient Pressure Thermal Cycling											AE-26151/7
2.4.2	Vacuum Thermal Cycling											AE-26156/11/12
2.5	Electromagnetic Compatibility					X			X	X	X	AE-26151/5

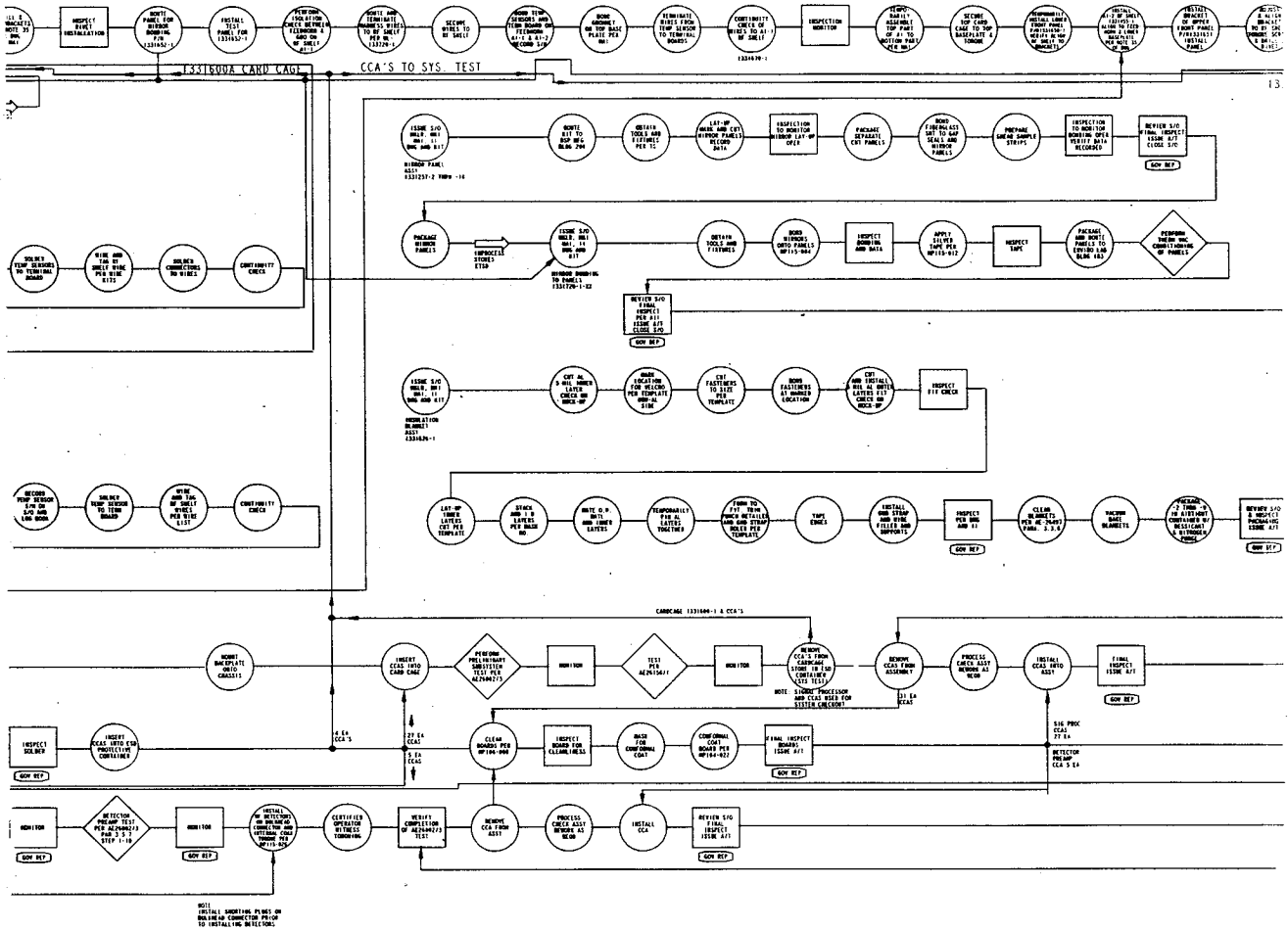
APPENDIX-A

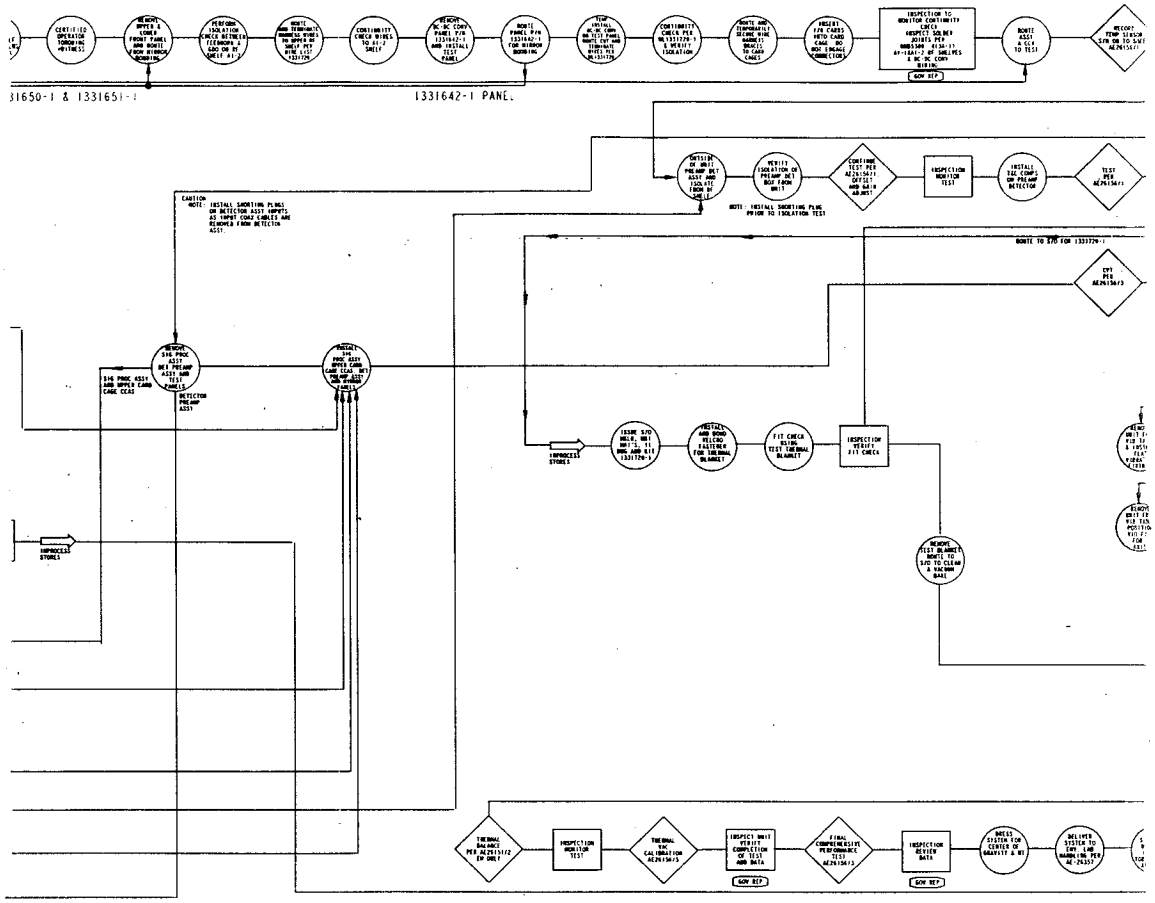
Integrated Manufacturing And Instrument Test Plan (IMITP)

NOTES:

KLM/AMSU-A1
FINAL ASSEMBLY




T331600A CARD CAGE
CCA'S TO SYS. TEST
CARDCAGE 1331600-1 & CCA'S
INSPECT SOLDER
INSERT CCAS INTO ESD PROTECTIVE CONTAINERS
MONITOR
DETECTOR PRECAMP TEST PER AE29A072/3 PAR 3.3.1 STEP 1-10
MONITOR
INSTALL 75 RESISTORS ON BACKSIDE OF CONNECTOR AND HOT BRAK CCAS THERE PER MP115-825
CERTIFIED MYLATOR WITNESS TORMENTING
VERIFY COMPLETION OF AE29A072/3 TEST
REMOVE CCA FROM ASSY
PROCESS CHECK ASSY REMOVE AS REQD
INSTALL CCA
REVISE S/O TO INSPECT ISSUE A/T
GOV REF
NOTE: INSTALL SHORTING PLUGS ON BACKHEAD CONNECTOR PRIOR TO INSTALLING DETECTORS
4 EA CCA'S
27 EA CCAS
5 EA CCAS
CLEAN BOARDS PER MP104-009
INSPECT BOARD FOR CLEANLINESS
BAKE FOR CONFORMAL COAT
CONFORMAL COAT BOARD PER MP164-027
FINAL INSPECT BOARD; ISSUE A/T
INSERT CCAS INTO CARD CAGE
PERFORM PRELIMINARY SUBSYSTEM TEST PER AE29A072/3
MONITOR
TEST PER AE29A072/1
MONITOR
REMOVE CCA'S FROM CARDCAGE STORE IN ESD CONTAINERS (SYS TEST)
NOTE: S/200Z PROCESSOR AND CCAS USED FOR SYSTEM CHECKOUT
REMOVE CCAS FROM ASSEMBLY
33 EA CCAS
PROCESS CHECK ASSY REMOVE AS REQD
INSTALL CCAS INTO ASSY
FINAL INSPECT ISSUE A/T
516 PROC CCAS 27 EA
DETECTOR PRECAMP CCA 5 EA
BOARD BACKPLATE ONTO CHASSIS
SOLDER TEMP SENSORS TO TERM BOARD
WIRE AND TAG AT SHELF WIRES PER WIRE LIST
CONTINUITY CHECK
RECORD TEMP SENSOR S/N ON S/O AND LOG BOOK
LAY-UP INNER LAYERS CKT PER TEMPLATE
STACK AND I D LAYERS PER DRLG NO
NOTE O.P. DATA AND INNER LAYERS
TEMPORARILY FAB AL LAYERS TOGETHER
TRIM TO FIT TRIM CHECK RETAINER AND STRAP HOLES PER TEMPLATE
TAPE EDGES
INSTALL END STRAP AND WIRE FILLER AND SUPPORTS
INSPECT PER DRG AND FI
CLEAN BLANKETS PER AE 29A72 PARA: 2.5.4
VACUUM BAKE BLANKETS
PACKAGE -7 THRU -9 FOR SHIPMENT TO AVIONICS & NITROGEN PURGE
REVISE S/O & INSPECT PACKAGING ISSUE A/T
GOV REF
ISSUE S/O HOLD; ONE (1) DRG AND KIT
RIBBON PANEL ASST 1331257-2 THRU -16
NOTE KIT TO BOP BFG BLDG 794
OBTAIN TOOLS AND FIXTURES PER TO
LAY-UP INNER AND CKT RIBBON PANELS RECORD DATA
INSPECTION TO MONITOR RIBBON LAY-UP ORDER
PACKAGE SEPARATE CKT PANELS
BOND FIBERGLASS SHT TO GAP SEALS AND RIBBON PANELS
PREPARE SHEAR SAMPLE STRIPS
INSPECTION TO MONITOR BONDING OPER VERIFY DATA RECORDED
REVIEW S/O FINAL INSPECT ISSUE A/T CLOSE S/O
GOV REF
PACKAGE RIBBON PANELS
INSPECTS STORES ETSO
ISSUE S/O HOLD, ONE (1) DRG AND KIT
RIBBON BONDING TO PANELS 1331720-1-12
OBTAIN TOOLS AND FIXTURES
BOND RIBBONS ONTO PANELS MP115-844
INSPECT BONDING AND DATA
APPLY SILVER TAPE PER MP113-012
INSPECT TAPE
PACKAGE AND ROUTE PANELS TO ENVIRO LAB BLDG 683
PERFORM THERMAL CONDITIONING OF PANELS
GOV REF
REVISE S/O FINAL INSPECT PER KIT; ISSUE S/O ISSUE A/T
GOV REF
ISSUE S/O HOLD, ONE (1) DRG AND KIT
INSULATION SUBASSY BLDG 1331626-1
CKT AL 5 MIL INNER LAYER CHECK OR ROCK-UP
DRAW LOCATION FOR RECORD PER TEMPLATE AND AL SIDE
CKT FASTENERS TO SIDE PER TEMPLATE
BOND FASTENERS AT MARKED LOCATION
CKT AND INSTALL ALL AL OUTER LAYERS FIT CHECK OR ROCK-UP
INSPECT FIT CHECK
SOLDER TEMP SENSORS TO TERMINAL BOARD
WIRE AND TAG AT SHELF WIRES PER WIRE LIST
SOLDER CONNECTORS TO WIRES
CONTINUITY CHECK
PERFORM ISOLATION CHECK BETWEEN TERMINALS 4 GND ON AT SHELF #11
ROUTE AND TERMINATE HARNESS WIRES TO AT SHELF PER DR 1331726-1
SECURE WIRES TO AT SHELF
ADDED TEMP SENSORS AND TERM BOARD ON T331600A A1-1 & A1-2 RECORD S/N
BOND BRACKET ON BOP BFG BASE PLATE PER DWG
TERMINATE PLATE TEMP SENSOR TO TERMINAL BOARDS
CONTINUITY CHECK OF WIRES TO A1-1 AT SHELF
1331639-1
INSPECTION MONITOR
SECURE BOP CARD CAGE TO BOP BASEPLATE 2 TORQUE
INSTALL BRACKET AT SHELF 1331639-1 ALONG W/ T331600A ASSY & INSTALL ASSY TO BOP BFG
INSTALL BRACKET AT SHELF 1331639-1 FRONT PANEL P/N1331257-1 INSTALL PANEL
INSTALL A1-1 ASSY (SHIPSET) 1331639-1 ALONG W/ T331600A ASSY & INSTALL ASSY TO BOP BFG
INSTALL A1-2 ASSY (SHIPSET) 1331639-2 ALONG W/ T331600A ASSY & INSTALL ASSY TO BOP BFG
INSTALL LOWER FRONT PANEL P/N1331257-2 INSTALL PANEL
INSTALL A1-1 ASSY (SHIPSET) 1331639-1 ALONG W/ T331600A ASSY & INSTALL ASSY TO BOP BFG
INSTALL A1-2 ASSY (SHIPSET) 1331639-2 ALONG W/ T331600A ASSY & INSTALL ASSY TO BOP BFG
INSTALL LOWER FRONT PANEL P/N1331257-2 INSTALL PANEL


1331650-1 & 1331651-1
1331642-1 PANEL
CAUTION
NOTE: INSTALL SHORTING PLUG ON DETECTOR ASSY INPUTS AS INPUT COAX CABLES ARE REMOVED FROM DETECTION ASSY.
NOTE: INSTALL SHORTING PLUG PRIOR TO ISOLATION TEST
INSPECTION MONITOR TEST
INSPECTION REVIEW DATA
INPROCESS STORES

REVISIONS			
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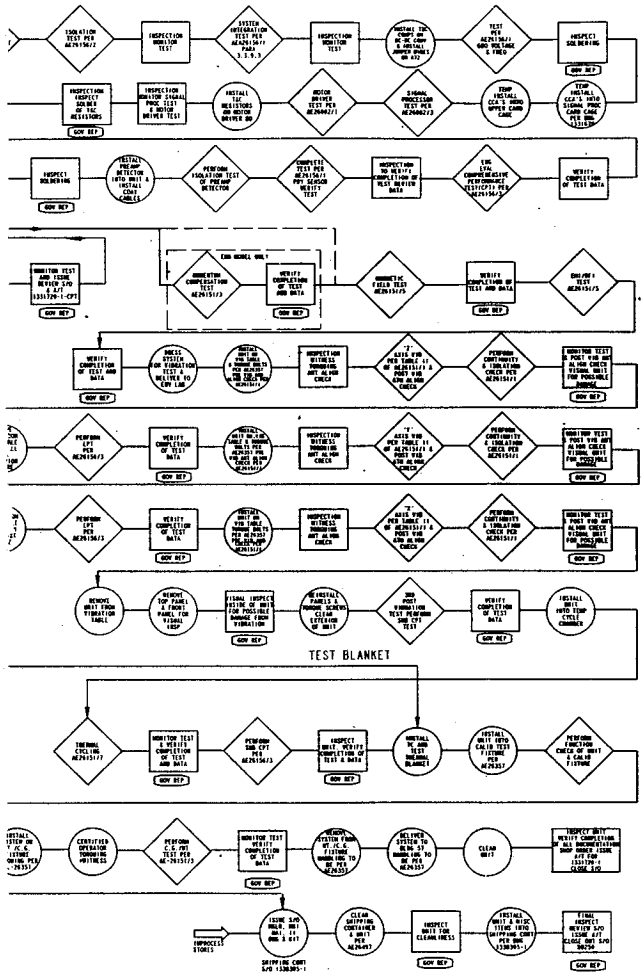

SYMBOLS KEY

- ASSEMBLY OPERATION
- TEST OPERATION
- PC MOVE OPERATION
- GOVERNMENT REPRESENTATIVE
- OUTSIDE PROCESSING
- INSPECTION OPERATION

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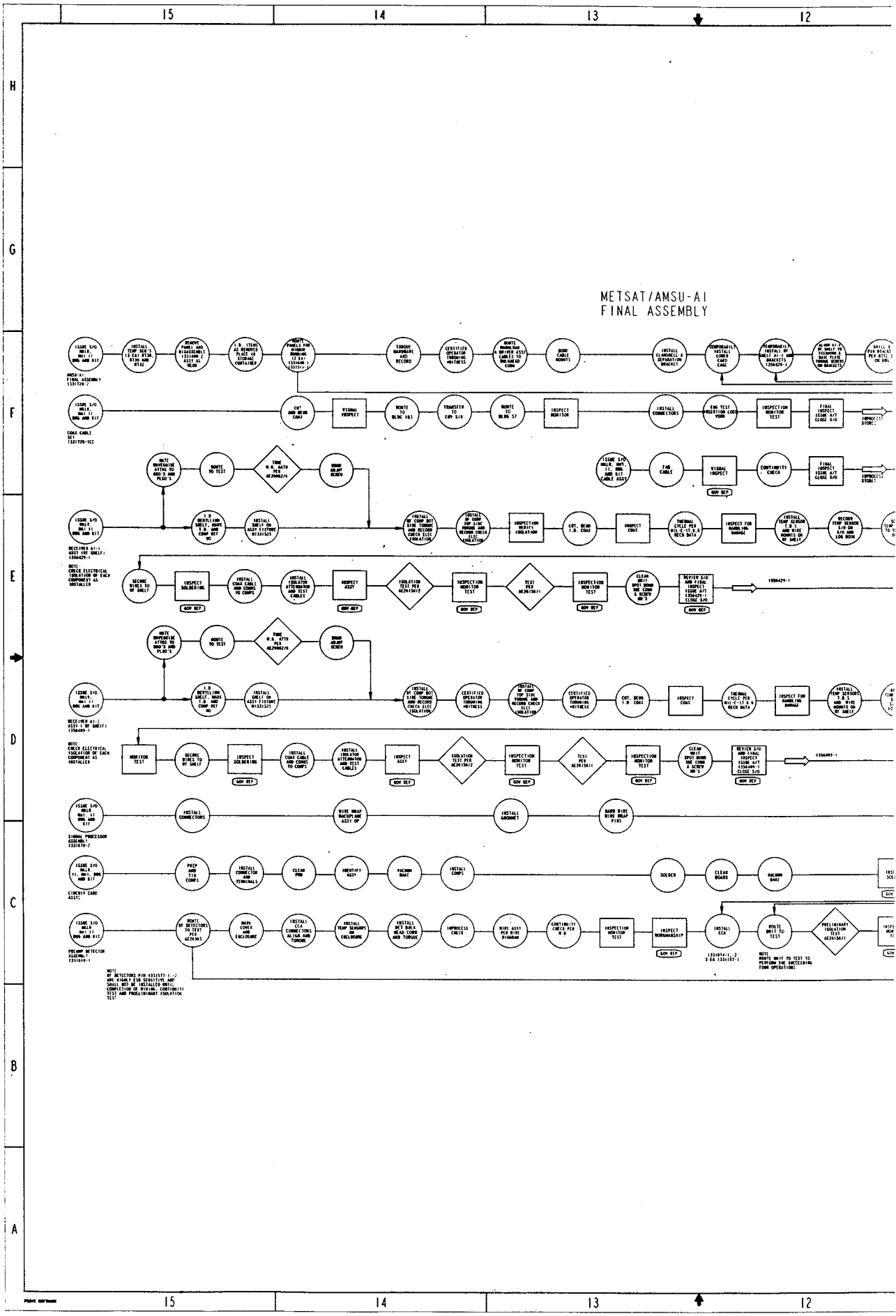
METSAT/AMSU-A1
FINAL ASSEMBLY
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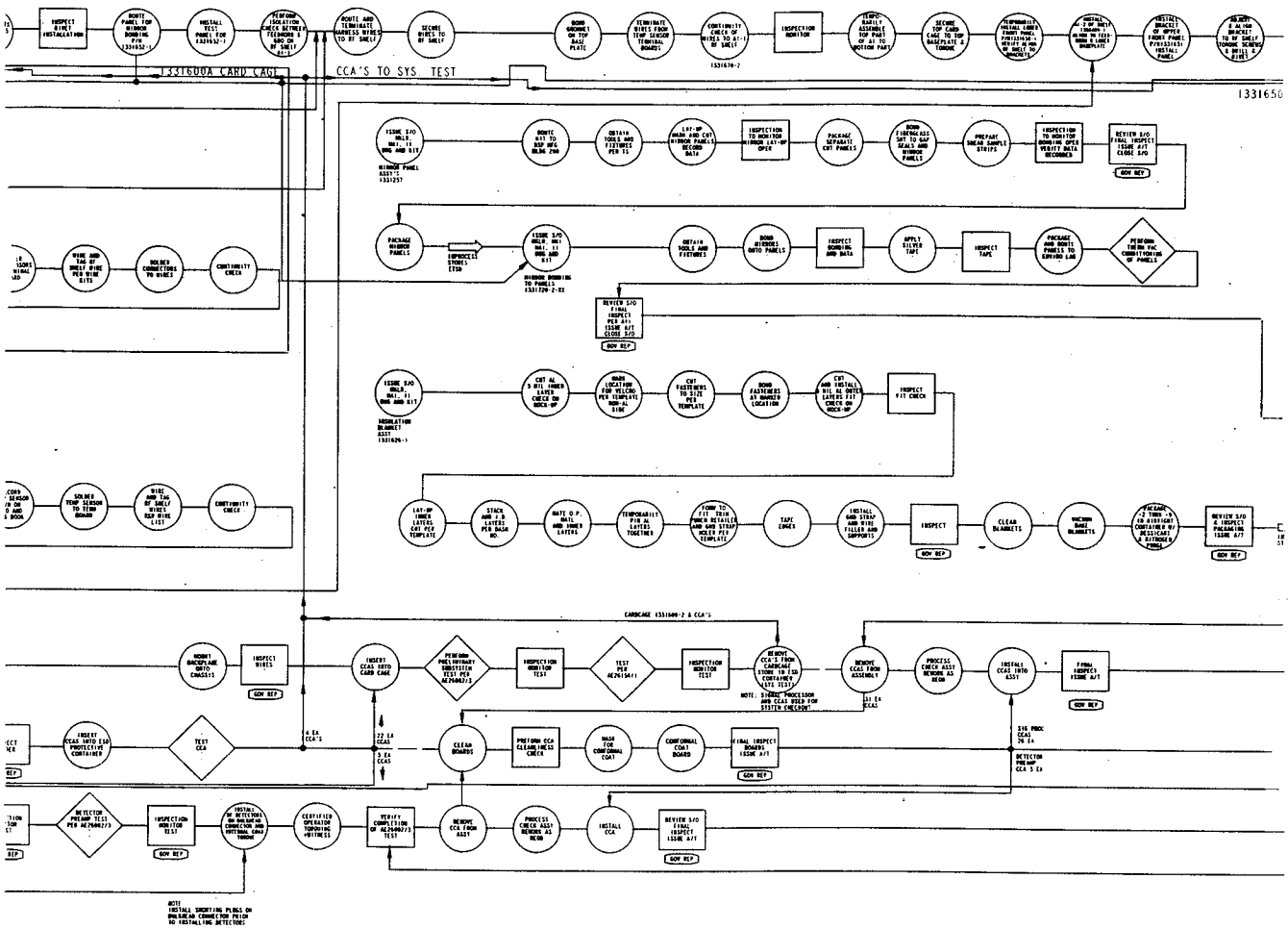
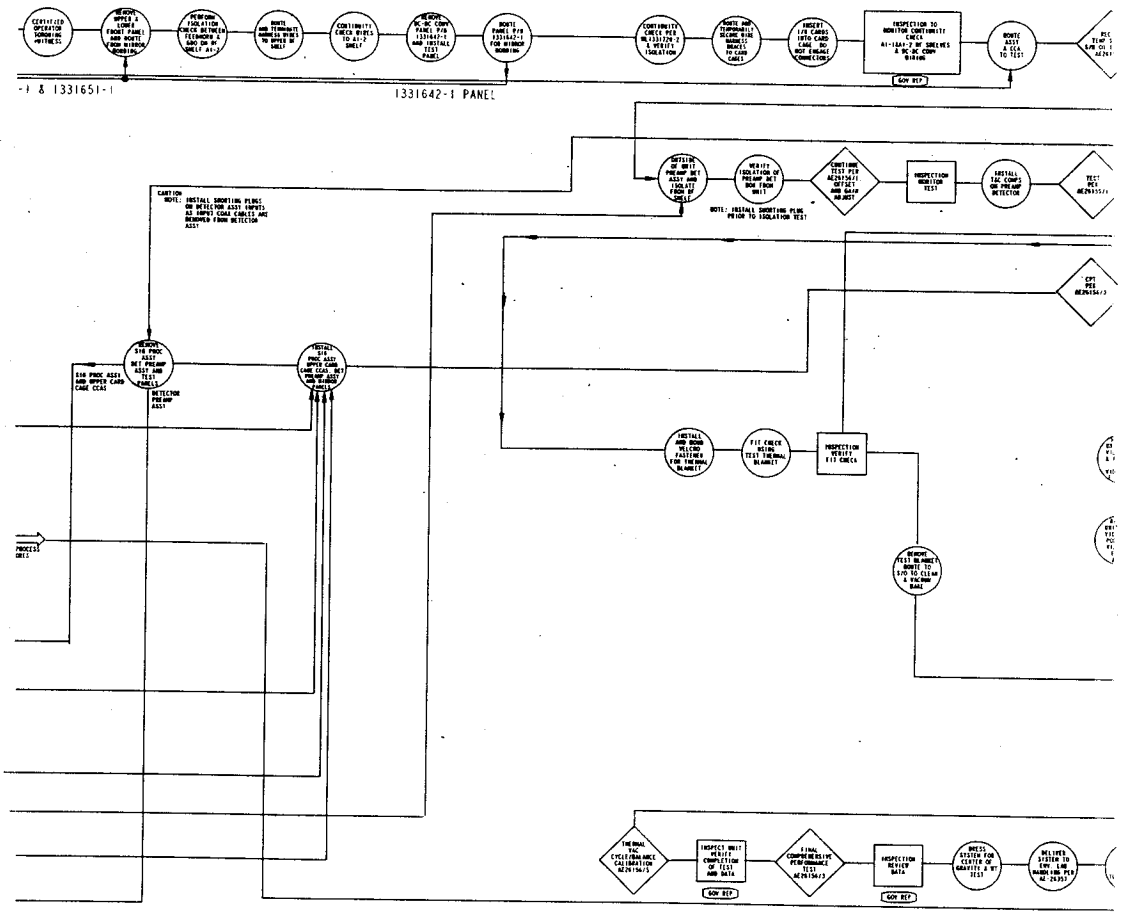
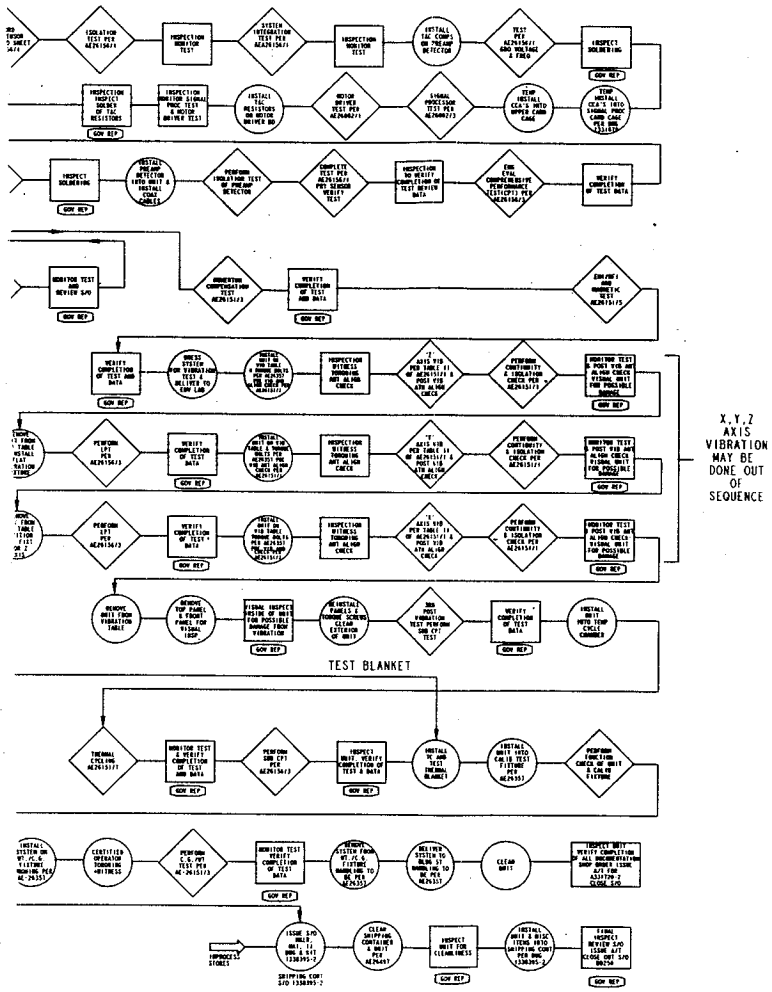

1331600A CARD CAGE
CCA'S TO SYS TEST
1331650
CARDCAGE 1331609-2 & CCA'S
NOTE: INSTALL SHORTING PLUGS ON UNUSED CONNECTOR PRIOR TO INSTALLING DETECTOR.


1331642-1 PANEL
CAUTION
NOTE: INSTALL SHORTING PLUGS
NOTE: INSTALL SHORTING PLUG
PRIOR TO ISOLATION TEST

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



GenCorp Aerojet ElectroSystems PO Box 296 Azusa, CA 91702	SIZE J	CAGE CODE 70143	DWG NO. 1338410		
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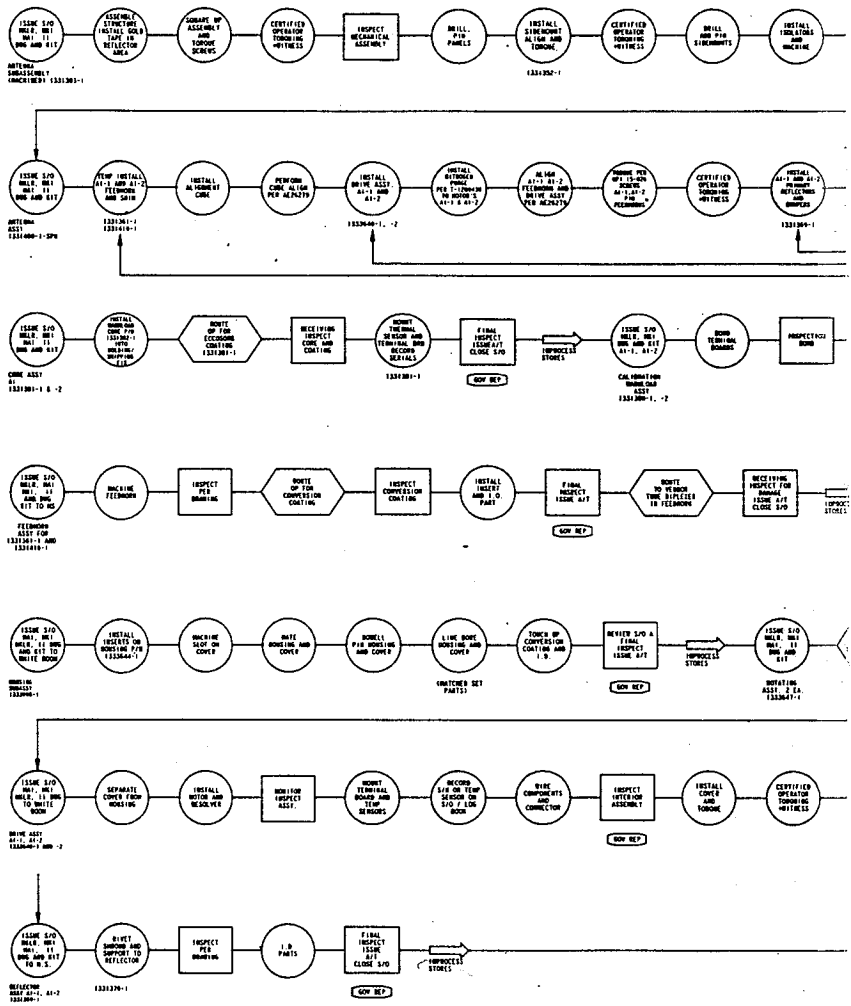
NOTES:


ISSUE S/O MAT. 11 DWG AND KIT
ASSEMBLE STRUCTURE INSTALL GOLD TAPE TO REFLECTOR AREA
SCRAPE UP ASSEMBLY AND TORQUE SCREWS
CERTIFIED OPERATOR TORQUING WITNESS
INSPECT MECHANICAL ASSEMBLY
DRILL PIN PANELS
INSTALL SIMONMET ALIGN AND TORQUE
CERTIFIED OPERATOR TORQUING WITNESS
DRILL AND PIN SIDEMOUNTS
INSTALL ISOLATORS AND MACHINE
ANTENNA SUBASSEMBLY (MACHINED) 1331303-1
ISSUE S/O MAT. 11 DWG AND KIT
TEMP INSTALL A1-1 AND A1-2 FEEDHORN AND SAVE
INSTALL ALIGNMENT CORE
PERFORM CORE ALIGN PER AE7479
INSTALL DRIVE ASSY A1-1 AND A1-2
INSTALL RATCHEON PHASE PER T-12904-30 NO HOUSE 1 A1-1 & A1-2
AL-160 A1-1 A1-2 FEEDHORNS AND DRIVE ASSY PER AE7479
MARK PER SPI 15-476 SCRIBE A1-1, A1-2 PIN FEEDHORNS
CERTIFIED OPERATOR TORQUING WITNESS
INSTALL A1-1 AND A1-2 PRIMARY REFLECTORS AND BRACES
ANTENNA ASSY 1331400-1-SPR
1331361-1 1331410-1
1331364-1, -2
1331369-1
ISSUE S/O MAT. 11 DWG AND KIT
INSTALL WAVEGUIDE CONE P/N 1331362 INTO SUBJUNC. SHIPPING LID
ROUTE OF TOR ECCOSORB CONTROL 1331361-1
RECEIVING INSPECT CORE AND COATING
MOUNT TNC RNAL SE WSHR AND TERMINAL DRD RECORD SERIALS
FINAL INSPECT ISSUE A/T CLOSE S/O
GOV REP
HPROCESS STORES
ISSUE S/O MAT. 11 DWG AND KIT A1-1, A1-2
CALIBRATION MAGNETIC CAL ASSY 1331309-1, -2
BOND TERMINAL BOARDS
INSPECT/22 BOND
CONE ASSY A1 1331361-1 & -2
ISSUE S/O MAT. 11 DWG AND KIT TO MS
MACHINE FEEDHORN
INSPECT PER DRAWING
ROUTE OF TOR CONVERSION COATING
INSPECT CONVERSION COATING
INSTALL INSERT AND I.D. PART
FINAL INSPECT ISSUE A/T
GOV REP
ROUTE TO FEEDHORN TANK DEPLETED IN FEEDHORN
RECEIVING INSPECT FOR DAMAGE ISSUE A/T CLOSE S/O
FEEDHORN ASSY FOR 1331361-1 AND 1331410-1
ISSUE S/O MAT. MK MATL. 11 DWG AND KIT TO WHITE ROOM
INSTALL INSERTS ON HOUSING P/N 1326447-1
MACHINE SLOT ON COVER
WHITE HOUSING AND COVER
BORELL P/N HOUSING AND COVER
LINE BORE HOUSING AND COVER
MATCHED SET PARTS
TORCH UP CONVERSION COATING AND I.D.
REVIEW S/O & FINAL INSPECT ISSUE A/T
GOV REP
HPROCESS STORES
ISSUE S/O MATL. MKA MATL. 11 DWG AND KIT
ROTATING ASSY, 2 EA 1333647-1
ISSUE S/O MATL. MK MATL. 11 DWG AND KIT TO WHITE ROOM
SEPARATE COVER FROM HOUSING
INSTALL MOTOR AND RESOLVER
ROM/EOM INSPECT ASSY.
MOUNT TERMINAL BOARDS AND TEMP SENSORS
RECORD S/O OR TEMP SENSOR ON S/O F LOG BOOK
WIRE COMPONENTS AND CONNECTOR
INSPECT INTERIOR ASSEMBLY
GOV REP
INSTALL COVER AND TORQUE
CERTIFIED OPERATOR TORQUING WITNESS
DRIVE ASSY A1-1, A1-2 1334640-1 AND -2
ISSUE S/O MATL. MKY MAT. 11 DWG AND KIT TO M.S.
DRIVET SHROUD AND SUPPORT TO REFLECTOR
INSPECT PER DRAWING
I.D PARTS
FINAL INSPECT ISSUE A/T CLOSE S/O
GOV REP
HPROCESS STORES
REFLECTOR ASSY A1-1, A1-2 1334399-1
1330329-1

REVISIONS			
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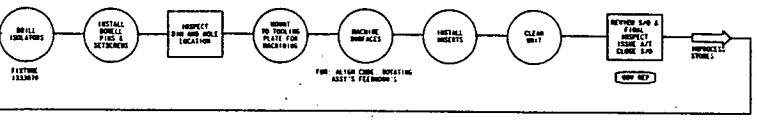
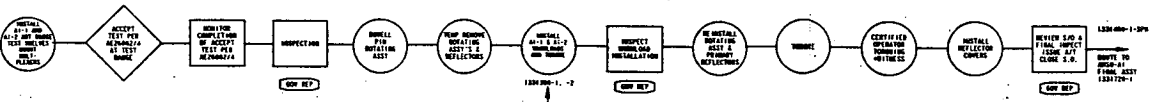
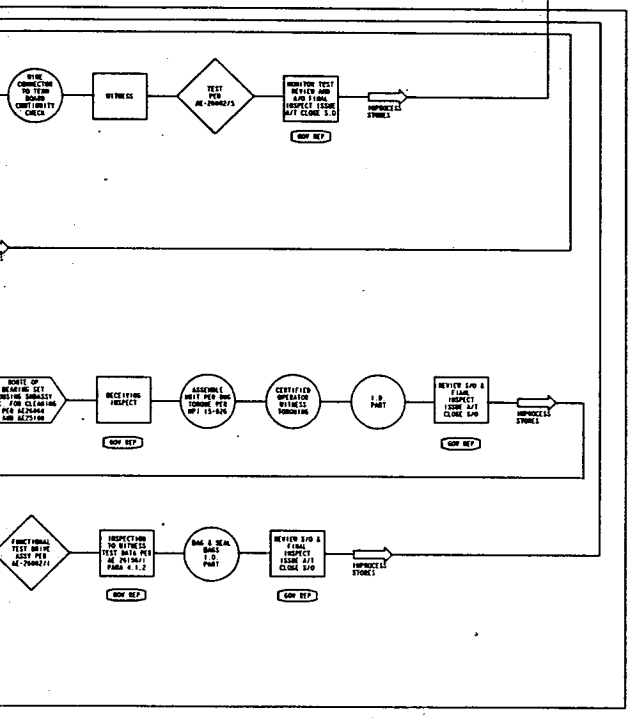
KLM/AMSU-A1
ANTENNA ASSEMBLY
1331400-1







SYMBOLS KEY

- ASSEMBLY OPERATION
- TEST OPERATION
- PC MOVE OPERATION
- GOVERNMENT REPRESENTATIVE (GOVT REP)
- OUTSIDE PROCESSING
- INSPECTION OPERATION

PART OR MAT'L	NEXT	FINAL	NEXT ASSEMBLY	USED ON
			APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCE
DECIMALS .XX ± .03 .XXX ± .010
ANGLES ± 2°
SURFACE FINISH
DO NOT SCALE DRAWING

DRAWING INTERPRETATION PER DOD-D-1000

CONTR NO. NAS 5-32314
DRAWN / CHECKED
CHECK
DESIGN
STRESS
MATERIALS
PRODUCTION
DESIGN ACTIVITY
Q A

GenCorp Aerojet — Electronic Systems Division, PO Box 296, Azusa, CA 91702

TITLE: FLOW PLAN, ANTENNA ASSEMBLY AMSU-A1

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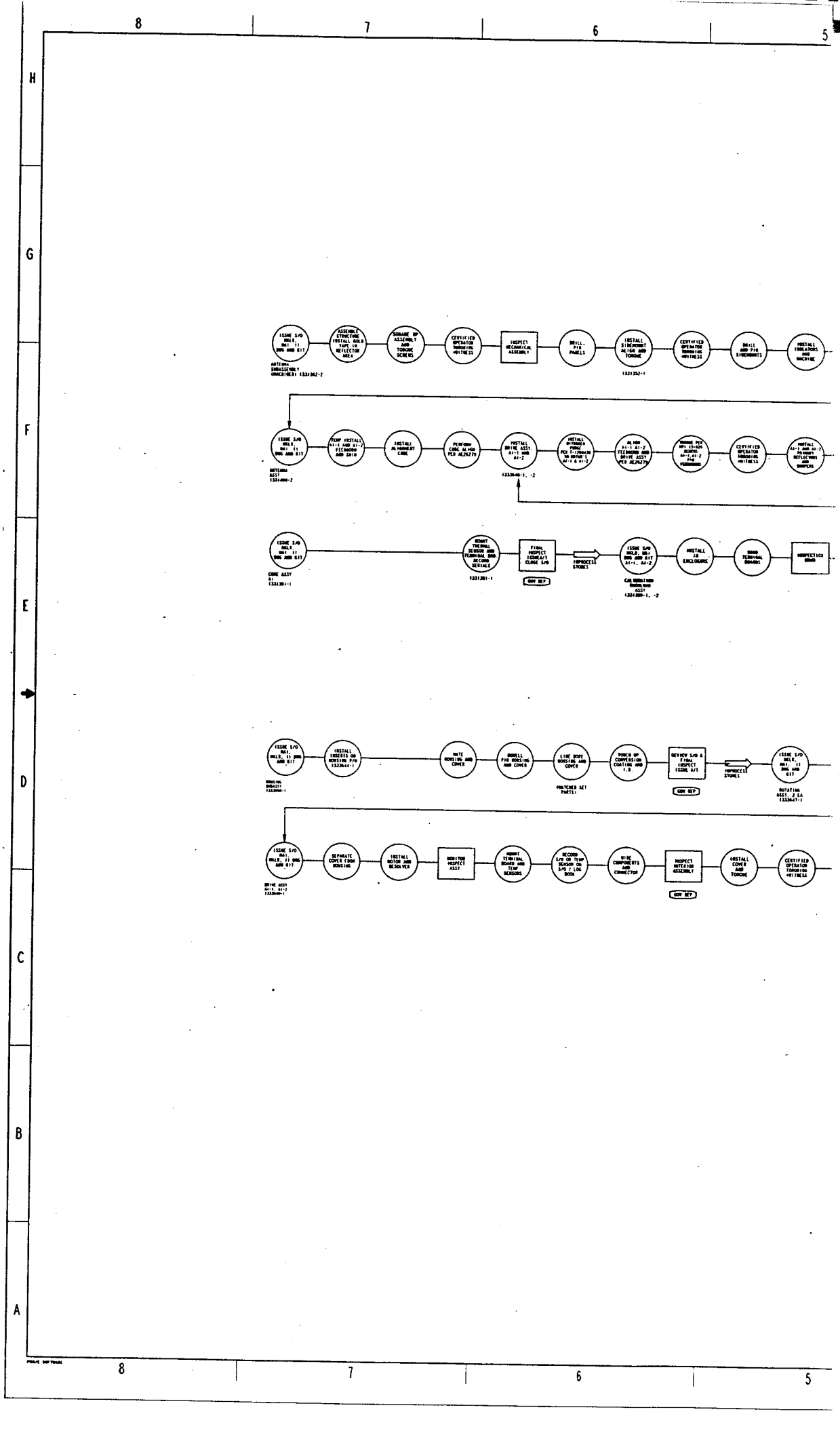
SCALE NONE | REL DATE | WT | SHEET 1 OF 2

1338411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ISSUE S/O
ASSEMBLE STRUCTURE INSTALL GOLD TAPE ON REFLECTOR AREA
SQUARE UP ASSEMBLY AND TORQUE SCREWS
CERTIFIED OPERATOR TORQUING WITNESS
INSPECT MECHANICAL ASSEMBLY
DRILL PIN PANELS
INSTALL SUNSHIELD AL'GS AND TORQUE
CERTIFIED OPERATOR TORQUING WITNESS
DRILL AND PIN SUNSHIELDS
INSTALL INSULATORS AND MACHINE
TEMP INSTALL A4-1 AND A4-2 FEEDHORN AND GAIN
INSTALL ALIGNMENT CUBE
PERFORM CONE ALIGN PER AE/A279
INSTALL DRIVE ASSY. A4-1 AND A4-2
INSTALL ALIGN AL HOR FEEDHORN AND DRIVE ASSY PER AE/A279
CERTIFIED OPERATOR TORQUING WITNESS
INSTALL A4-1 AND A4-2 INSULATORS AND BUMPERS
ISSUE S/O
BOND THERMAL SENSOR AND TERMINAL BOARD AND SECURE HARNESS
FINAL INSPECT ISSUE A/I CLOSE S/O
GOV REP
REPROCESS STONES
ISSUE S/O
INSTALL IN ENCLOSURE
BOND TERMINAL BOARDS
ISSUE S/O
INSTALL INSERTS ON HOUSING P/N
MATE HOUSING AND COVER
DOWEL P/N HOUSING AND COVER
LINE BORE HOUSING AND COVER
MATCHED SET PARTS!
TORQUE UP CONNECTING COVERS AND
REVIEW S/O & FINAL INSPECT ISSUE A/I
GOV REP
REPROCESS STONES
ISSUE S/O
ROTATING ASSY. 2 EA
ISSUE S/O
SEPARATE COVER FROM HOUSING
INSTALL MOTOR AND RESOLVER
MONITOR INSPECT ASSY
MOUNT TERMINAL BOARD AND TEMP SENSORS
RECORD S/N OF TEMP SENSORS ON S/O & LOG BOOK
WIRE COMPONENTS AND CONNECTOR
INSPECT INTERIOR ASSEMBLY
GOV REP
INSTALL COVER AND TORQUE
CERTIFIED OPERATION TORQUING WITNESS

REVISIONS			
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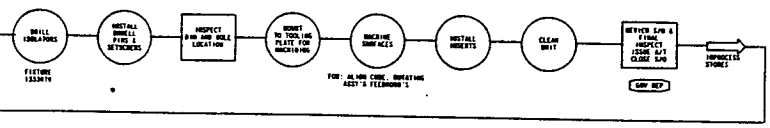
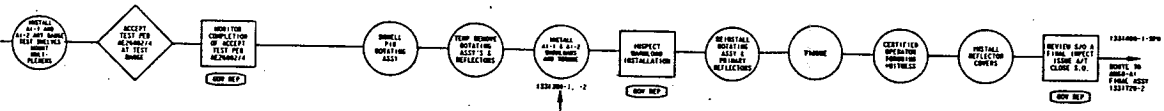
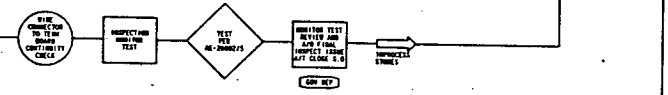
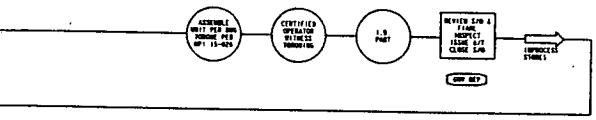
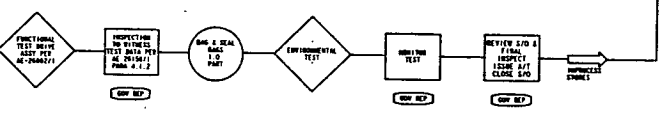
METSAT/AMSU-A1
ANTENNA ASSEMBLY
1331400-2







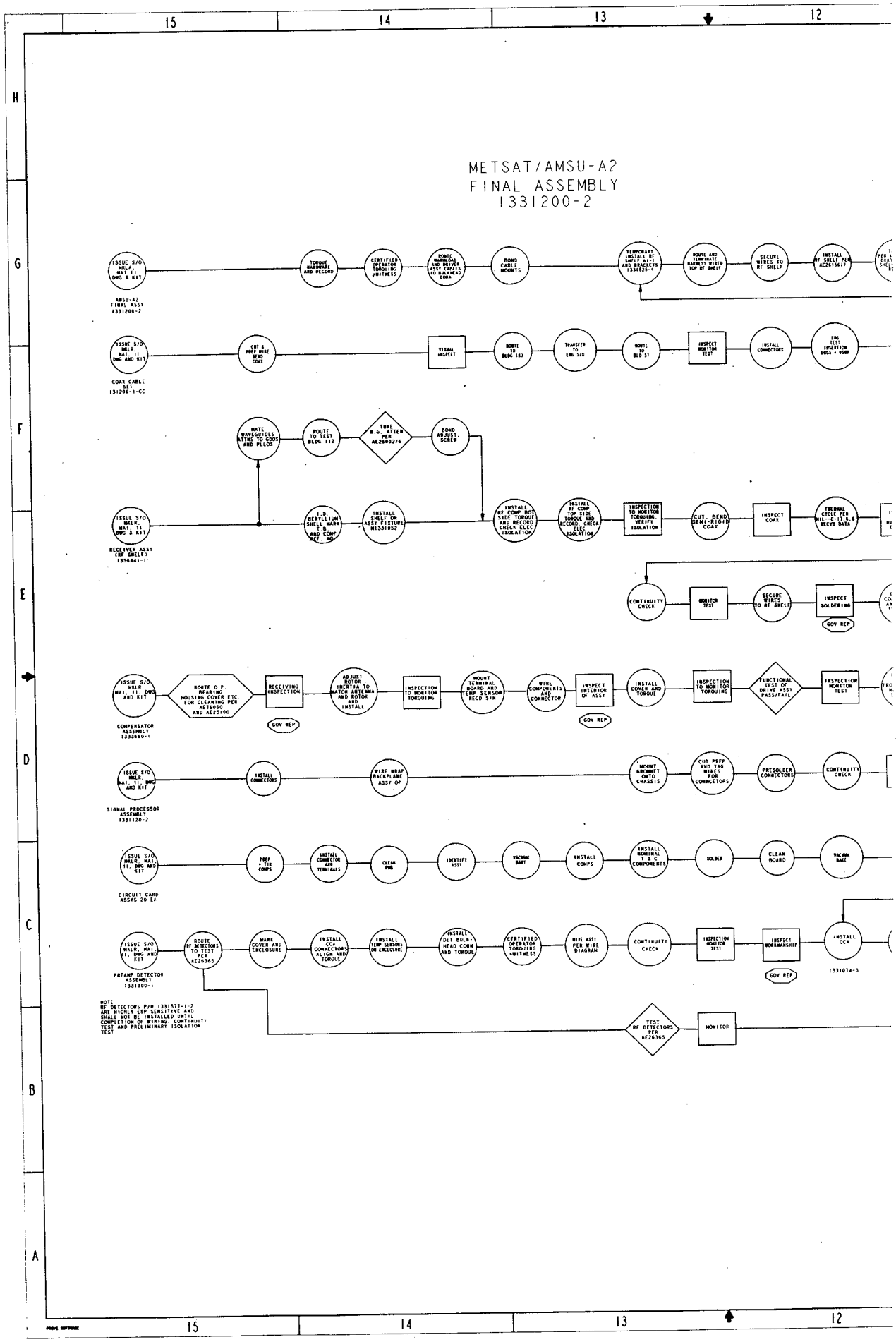


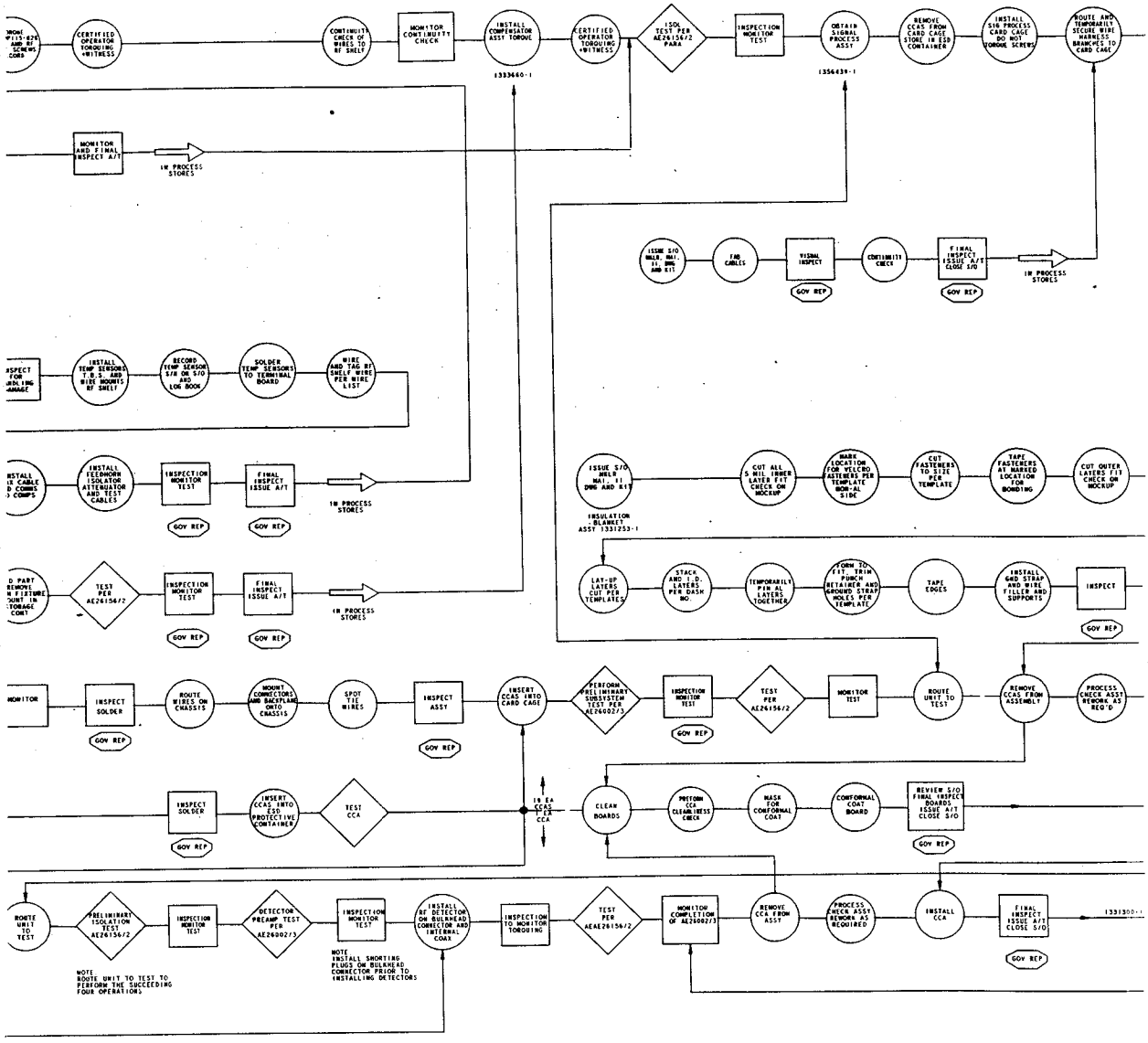


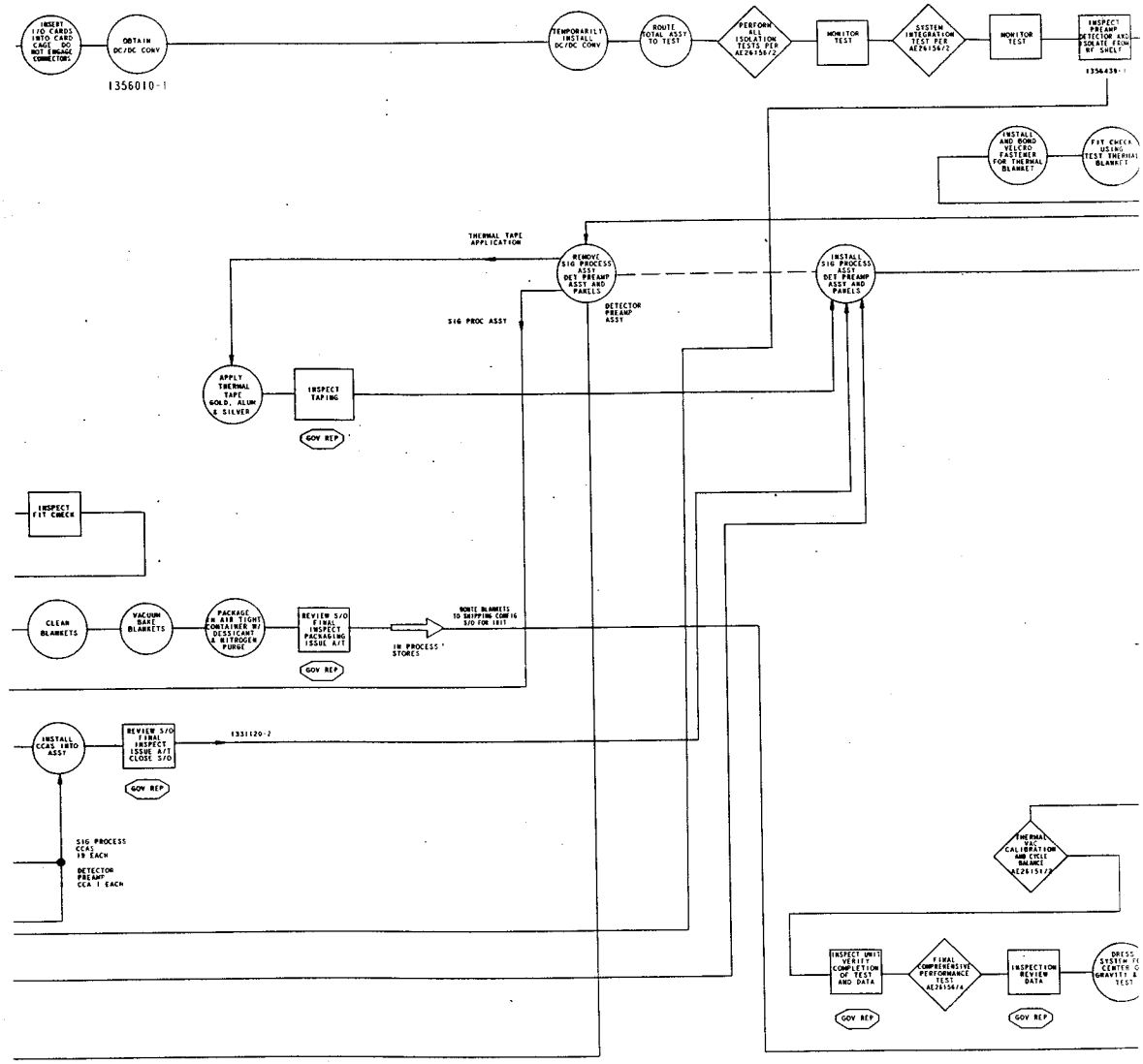
GenCorp Aerojet, Electronic Systems Division, PO Box 296, Azusa, Ca 91702	SIZE E	CAGE CODE 70143	DWG NO 1338411
	SCALE		SHEET 2 2

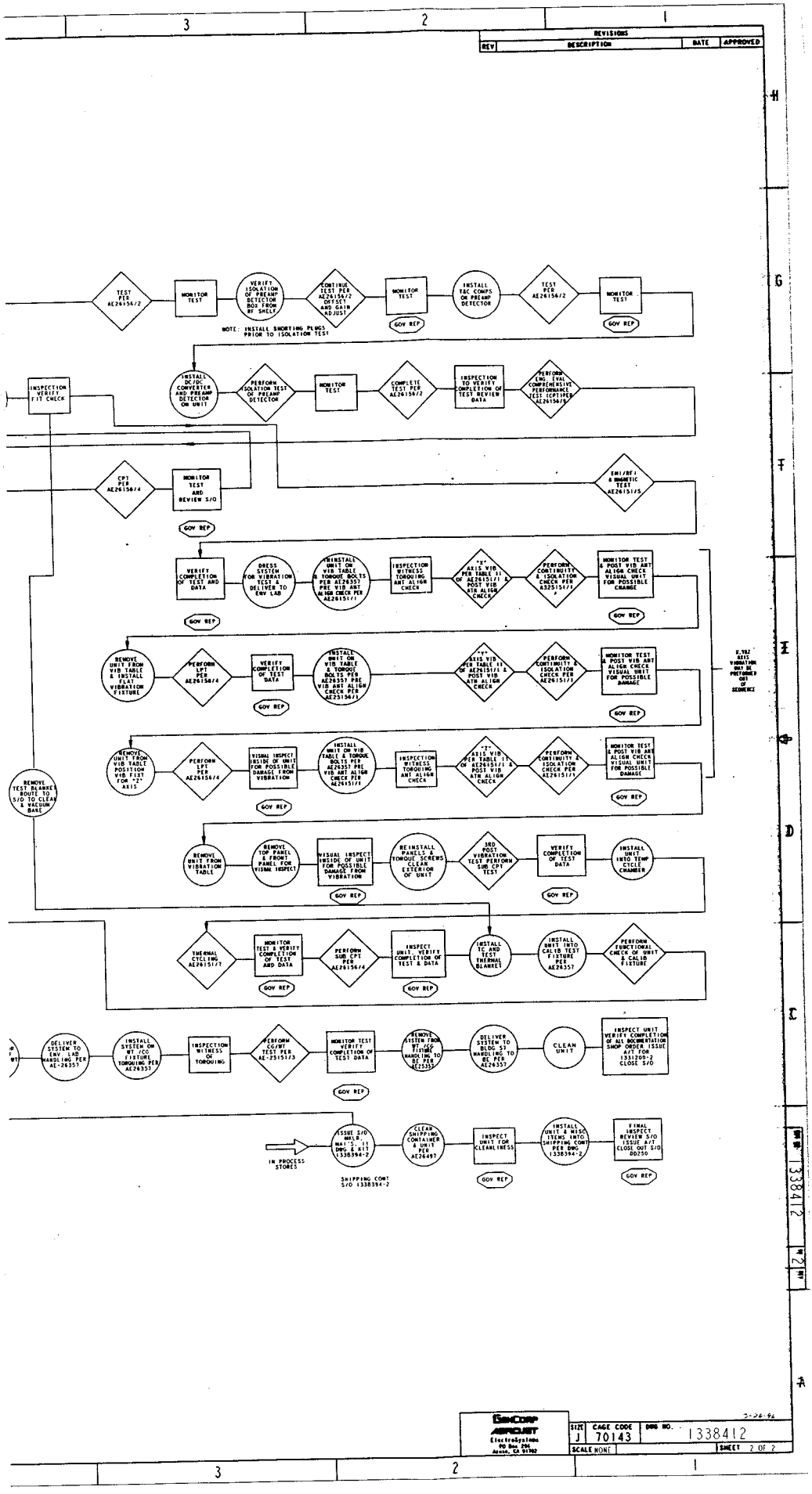
1338411 REV 2

METSAT/AMSU-A2
FINAL ASSEMBLY
1331200-2



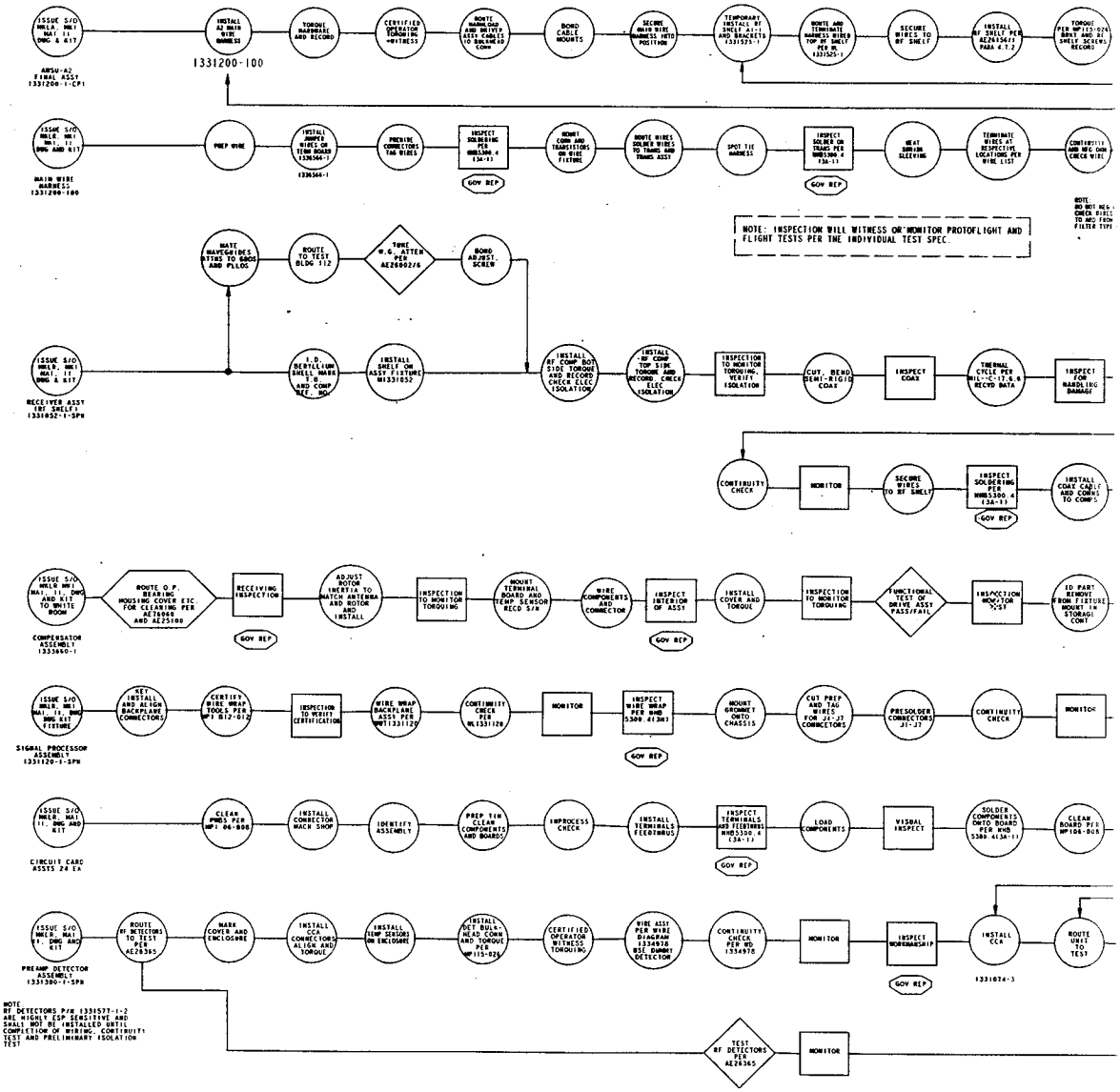

CERTIFIED OPERATOR TORQUING +WITNESS
CONTINUITY CHECK OF WIRES TO RF SHELF
MONITOR CONTINUITY CHECK
INSTALL COMPENSATOR ASSY TORQUE
1333640-1
CERTIFIED OPERATOR TORQUING +WITNESS
ISOL TEST PER AE26156/2 PARA
INSPECTION MONITOR TEST
OBTAIN SIGNAL PROCESS ASSY
1356439-1
REMOVE CCAS FROM CARD CAGE STORE IN ESD CONTAINER
INSTALL S/G PROCESS CARD CAGE DO NOT TORQUE SCREWS
ROUTE AND TEMPORARILY SECURE WIRE HARNESS BRANCHES TO CARD CAGE
MONITOR AND FINAL INSPECT A/T
IN PROCESS STORES
ISSUE S/O MAIL MAT. TO DMS AND RIT
FAB CABLES
VISUAL INSPECT
GOV REP
CONTINUITY CHECK
FINAL INSPECT ISSUE A/T CLOSE S/O
GOV REP
IN PROCESS STORES
INSTALL TEMP SENSORS T.B.S. AND WIRE MOUNTS RF SHELF
RECORD TEMP SENSOR S/N ON S/O AND LOG BOOK
SOLDER TEMP SENSORS TO TERMINAL BOARD
WIRE AND TAG RF SHELF WIRE PER WIRE LIST
INSTALL FEEDHORN ISOLATOR ATTENUATOR AND TEST CABLES
INSPECTION MONITOR TEST
GOV REP
FINAL INSPECT ISSUE A/T
GOV REP
IN PROCESS STORES
ISSUE S/O MAIL MAT. TO DMS AND RIT
INSULATION - BLANKET ASSY 1331253-1
CUT ALL S MIL LAYER FIT CHECK ON MOCKUP
MARK LOCATION FOR VELCRO FASTENERS PER TEMPLATE BOTH SIDE
CUT FASTENERS TO SIZE PER TEMPLATE
TAPE FASTENERS AT MARKED LOCATION FOR BONDING
CUT OUTER LAYERS FIT CHECK ON MOCKUP
TEST PER AE26156/2
INSPECTION MONITOR TEST
GOV REP
FINAL INSPECT ISSUE A/T
GOV REP
IN PROCESS STORES
LAY-UP LAYERS CUT PER TEMPLATES
STACK AND D. LAYERS PER DASH NO.
TEMPORARILY PIN AL LAYERS TOGETHER
TRIM TO FIT, TRIM PUNCH RETAINER AND GROUND STRAP HOLES PER TEMPLATE
TAPE EDGES
INSTALL GND STRAP AND WIRE, FILLER AND SUPPORTS
INSPECT
GOV REP
INSPECT SOLDER
GOV REP
ROUTE WIRES ON CHASSIS
MOUNT CONNECTORS AND BACKPLANE ONTO CHASSIS
SPOT TIE WIRES
INSPECT ASSY
GOV REP
INSERT CCAS INTO CARD CAGE
PERFORM PRELIMINARY SUBSYSTEM TEST PER AE26002/3
INSPECTION MONITOR TEST
GOV REP
TEST PER AE26156/2
MONITOR TEST
ROUTE UNIT TO TEST
REMOVE CCAS FROM ASSEMBLY
PROCESS CHECK ASSY REWORK AS REQ'D
INSPECT SOLDER
GOV REP
INSERT CCAS INTO ESD PROTECTIVE CONTAINER
TEST CCA
18 EA CCAS PER CCA
CLEAN BOARDS
PERFORM CCA CLEANLINESS CHECK
MASK FOR CONFORMAL COAT
CONFORMAL COAT BOARD
REVIEW S/O FINAL INSPECT BOARDS ISSUE A/T CLOSE S/O
GOV REP
ROUTE UNIT TO TEST
PRELIMINARY ISOLATION TEST AE26156/2
NOTE
ROUTE UNIT TO TEST TO PERFORM THE SUCCEEDING FOUR OPERATIONS
INSPECTION MONITOR TEST
DETECTOR PREAMP TEST PER AE26002/3
INSPECTION MONITOR TEST
NOTE
INSTALL SHORTING PLUGS ON BULKHEAD CONNECTOR PRIOR TO INSTALLING DETECTORS
INSTALL RF DETECTOR ON BULKHEAD CONNECTOR AND INTERNAL COAX
INSPECTION TO MONITOR TORQUING
TEST PER AEAE26156/2
MONITOR COMPLETION OF AE26002/3
REMOVE CCA FROM ASSY
PROCESS CHECK ASSY REWORK AS REQUIRED
INSTALL CCA
FINAL INSPECT ISSUE A/T CLOSE S/O
GOV REP
1331300-1

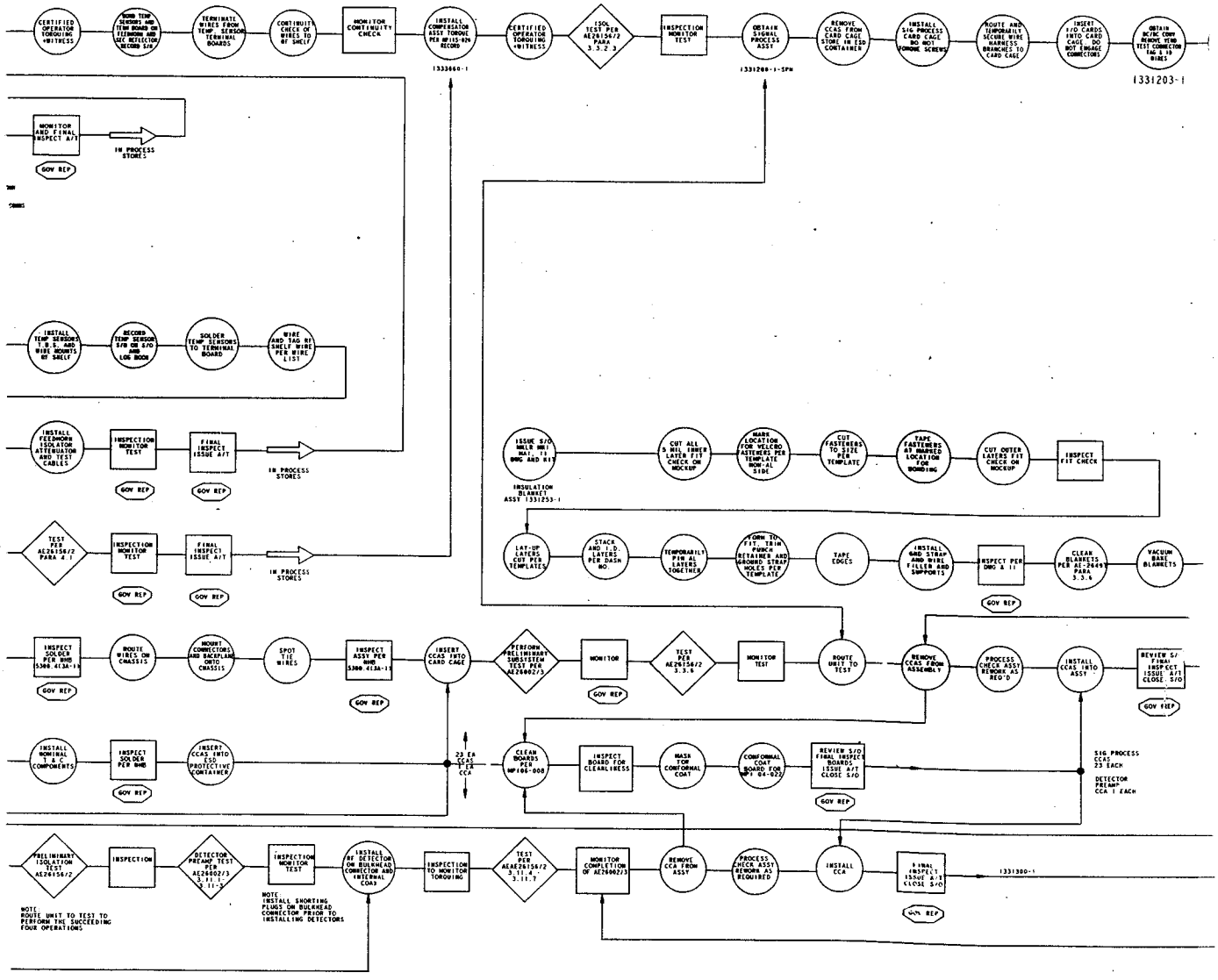

INSERT I/O CARDS INTO CARD CAGE DO NOT ENGAGE CONNECTORS
OBTAIN DC/DC CONV
1356010-1
TEMPORARILY INSTALL DC/DC CONV
ROUTE TOTAL ASSY TO TEST
PERFORM ALL ISOLATION TESTS PER AE26158/2
MONITOR TEST
SYSTEM INTEGRATION TEST PER AE26158/2
MONITOR TEST
INSPECT PREAMP DETECTOR AND ISOLATE FROM RF SHELF
1356439-1
INSTALL AND BOND VELCRO FASTENER FOR THERMAL BLANKET
FIT CHECK USING TEST THERMAL BLANKET
THERMAL TAPE APPLICATION
REMOVE SIG PROCESS ASSY DET PREAMP ASSY AND PANELS
DETECTOR PREAMP ASSY
SIG PROC ASSY
INSTALL SIG PROCESS ASSY DET PREAMP ASSY AND PANELS
APPLY THERMAL TAPE GOLD, ALUM & SILVER
INSPECT TAPING
GOV REP
INSPECT FIT CHECK
CLEAN BLANKETS
VACUUM BAKE BLANKETS
PACKAGE IN AIR TIGHT CONTAINER W/ DESSICANT & NITROGEN PURGE
REVIEW S/O FINAL INSPECT PACKAGING ISSUE A/T
GOV REP
ROUTE BLANKETS TO SHIPPING CONFIG S/O FOR IRIT
IN PROCESS STORES
INSTALL CCAS INTO ASSY
REVIEW S/O FINAL INSPECT ISSUE A/T CLOSE S/O
GOV REP
1331120-2
SIG PROCESS CCAS 19 EACH
DETECTOR PREAMP CCA 1 EACH
THERMAL VAC CALIBRATION AND CYCLE BALANCE AE26157/3
INSPECT UNIT VERIFY COMPLETION OF TEST AND DATA
GOV REP
FINAL COMPREHENSIVE PERFORMANCE TEST AE26156/4
INSPECTION REVIEW DATA
GOV REP

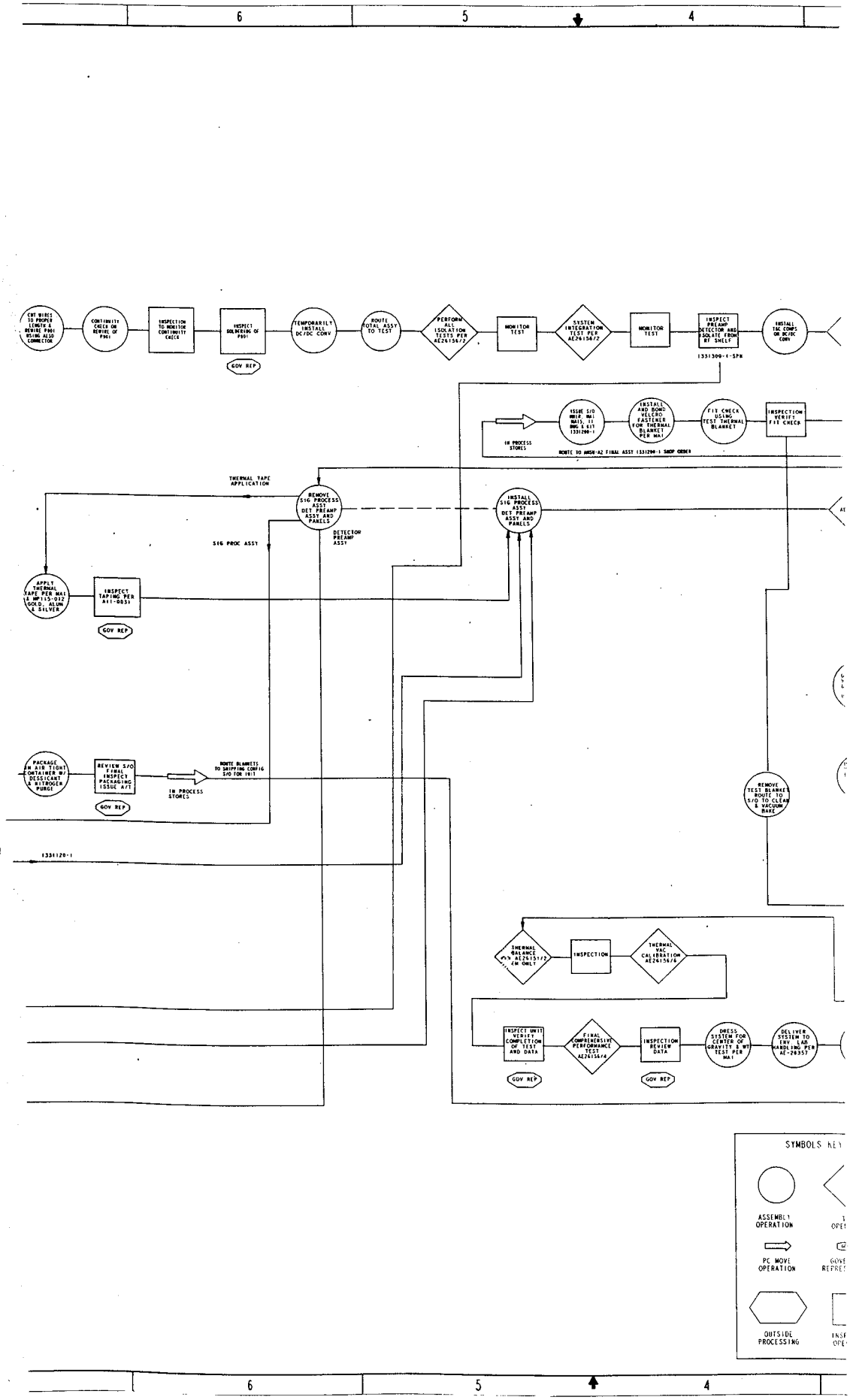

REVISIONS
REV
DESCRIPTION
DATE
APPROVED
TEST PER AE26156/2
MONITOR TEST
VERIFY ISOLATION OF PREAMP DETECTOR BOX FROM RF SHELF
CONTINUE TEST PER AE26156/2 OFFSET AND GAIN ADJUST
MONITOR TEST
GOV REP
INSTALL Y&C COMPS ON PREAMP DETECTOR
TEST PER AE26156/2
MONITOR TEST
GOV REP
NOTE: INSTALL SHORTING PLUGS PRIOR TO ISOLATION TEST
INSTALL DC/DC CONVERTER AND PREAMP DETECTOR ON UNIT
PERFORM ISOLATION TEST OF PREAMP DETECTOR
MONITOR TEST
COMPLETE TEST PER AE26156/2
INSPECTION TO VERIFY COMPLETION OF TEST REVIEW DATA
PERFORM ENG. FINAL COMPREHENSIVE PERFORMANCE TEST (CPT)PER AE26156/6
INSPECTION VERIFY FIT CHECK
CPT PER AE26156/4
MONITOR TEST AND REVIEW S/O
GOV REP
EMI/RFI & MAGNETIC TEST AE26151/5
VERIFY COMPLETION OF TEST AND DATA
GOV REP
DRESS SYSTEM FOR VIBRATION TEST & DELIVER TO ENV LAB
REINSTALL UNIT ON VIB TABLE & TORQUE BOLTS PER AE26357 PRE VIB ART ALIGN CHECK PER AE26151/1
INSPECTION WITNESS TORQUING ART ALIGN CHECK
"X" AXIS VIB PER TABLE II OF AE26151/1 & POST VIB ATR ALIGN CHECK
PERFORM CONTINUITY & ISOLATION CHECK PER A32515/1
MONITOR TEST & POST VIB ART ALIGN CHECK VISUAL UNIT FOR POSSIBLE CHANGE
GOV REP
REMOVE UNIT FROM VIB TABLE & INSTALL FLAT VIBRATION FIXTURE
PERFORM LPT PER AE26156/4
VERIFY COMPLETION OF TEST DATA
GOV REP
INSTALL UNIT ON VIB TABLE & TORQUE BOLTS PER AE26357 PRE VIB ART ALIGN CHECK PER AE25136/1
"Y" AXIS VIB PER TABLE II OF AE26151/1 & POST VIB ATR ALIGN CHECK
PERFORM CONTINUITY & ISOLATION CHECK PER AE26151/1
MONITOR TEST & POST VIB ART ALIGN CHECK VISUAL UNIT FOR POSSIBLE DAMAGE
GOV REP
REMOVE UNIT FROM VIB TABLE POSITION VIB FIXT FOR "Z" AXIS
PERFORM LPT PER AE26156/4
VISUAL INSPECT INSIDE OF UNIT FOR POSSIBLE DAMAGE FROM VIBRATION
GOV REP
INSTALL UNIT ON VIB TABLE & TORQUE BOLTS PER AE26357 PRE VIB ART ALIGN CHECK PER AE26151/1
INSPECTION WITNESS TORQUING ART ALIGN CHECK
"Z" AXIS VIB PER TABLE II OF AE26151/1 & POST VIB ATR ALIGN CHECK
PERFORM CONTINUITY & ISOLATION CHECK PER AE26151/1
MONITOR TEST & POST VIB ART ALIGN CHECK VISUAL UNIT FOR POSSIBLE DAMAGE
GOV REP
REMOVE TEST BLANKET ROUTE TO S/O TO CLEAN & VACUUM BAKE
REMOVE UNIT FROM VIBRATION TABLE
REMOVE TOP PANEL & FRONT PANEL FOR VISUAL INSPECT
VISUAL INSPECT INSIDE OF UNIT FOR POSSIBLE DAMAGE FROM VIBRATION
GOV REP
REINSTALL PANELS & TORQUE SCREWS CLEAN EXTERIOR OF UNIT
3RD POST VIBRATION TEST PERFORM SUB CPT TEST
VERIFY COMPLETION OF TEST DATA
GOV REP
INSTALL UNIT INTO TEMP CYCLE CHAMBER
THERMAL CYCLING AE26151/7
MONITOR TEST & VERIFY COMPLETION OF TEST AND DATA
GOV REP
PERFORM SUB CPT PER AE26156/4
INSPECT UNIT, VERIFY COMPLETION OF TEST & DATA
GOV REP
INSTALL TC AND TEST THERMAL BLANKET
INSTALL UNIT INTO CALIB TEST FIXTURE PER AE26357
PERFORM FUNCTIONAL CHECK OF UNIT ON CALIB FIXTURE
DELIVER SYSTEM TO ENV LAB HANDLING PER AE-26357
INSTALL SYSTEM ON RT /CC SHAKER TORQUING PER AE26357
INSPECTION WITNESS OF TORQUING
PERFORM SCOPT TEST PER AE-25151/3
MONITOR TEST VERIFY COMPLETION OF TEST DATA
GOV REP
REMOVE SYSTEM FROM RT /CC FIXTURE HANDLING TO BE PER AE26357
DELIVER SYSTEM TO BLDG 57 HANDLING TO BE PER AE26357
CLEAN UNIT
INSPECT UNIT VERIFY COMPLETION OF ALL DOCUMENTATION SHOP ORDER ISSUE A/T FOR 1331209/2 CLOSE S/O
IN PROCESS STORES
ISSUE S/O MAIL S/S DWG & A/T 1338394-2
SHIPPING CONT S/O 1338394-2
CLEAN SHIPPING CONTAINER & UNIT PER AE26497
INSPECT UNIT FOR CLEANLINESS
GOV REP
INSTALL UNIT & MISC ITEMS INTO SHIPPING CONT PER DWG 1338394-2
FINAL INSPECT REVIEW S/O ISSUE A/T CLOSE OUT S/O 00250
GOV REP
E.T.U. AXIS VIBRATION MAY BE PERFORMED OUT OF SEQUENCE
GenCorp Aerojet
Electrodynamic Systems
PO Box 296
Azusa, CA 91702
SIZE J
CAGE CODE 70143
DWG NO. 1338412
SCALE NONE
SHEET 2 OF 2
7-26-94

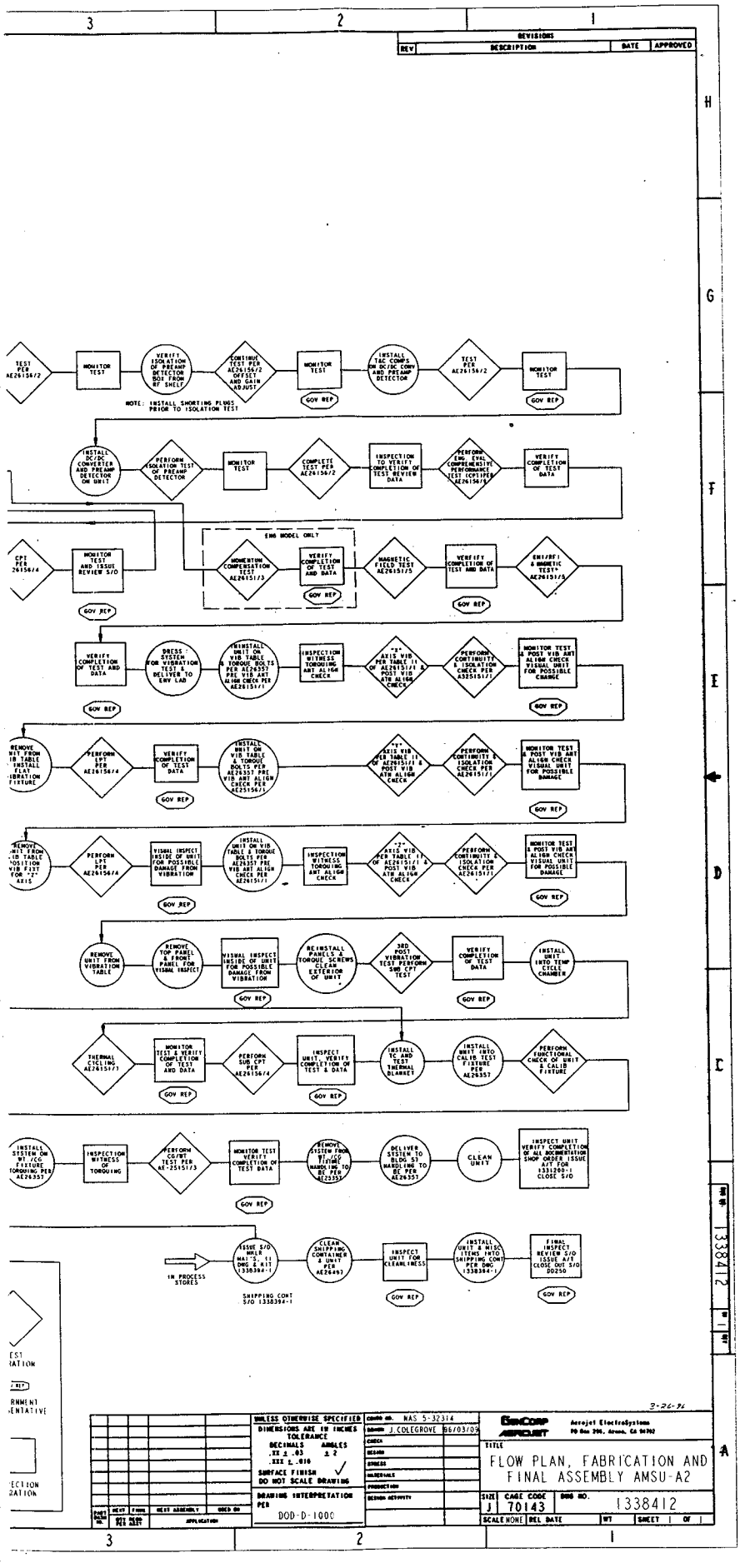
NOTES:

KLM/AMSU-A2
FINAL ASSEMBLY
1331200-1



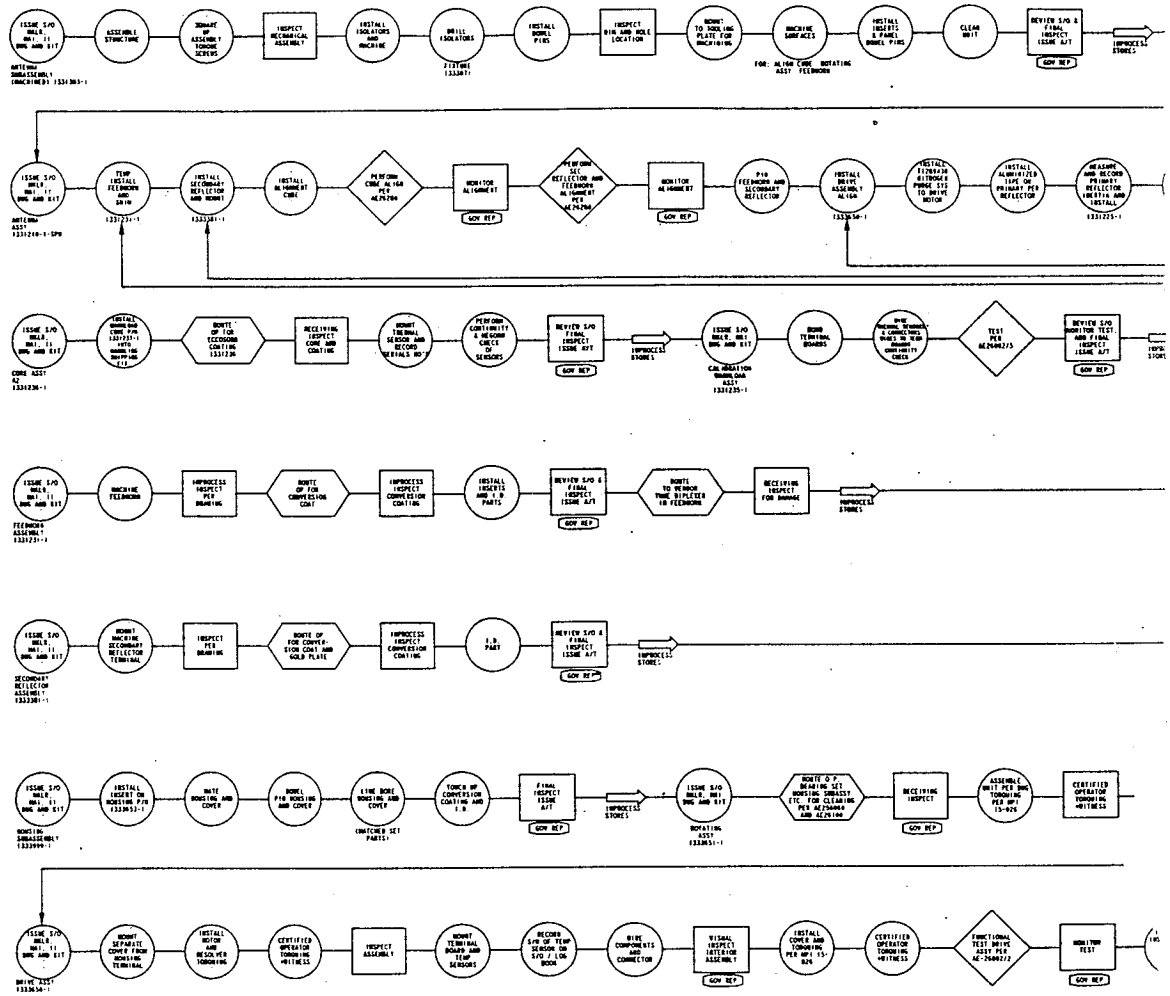

CERTIFIED OPERATOR TORQUING +WITNESS
TERMINATE WIRES FROM TEMP. SENSOR TERMINAL BOARDS
CONTINUITY CHECK OF WIRES TO RF SHELF
MONITOR CONTINUITY CHECK
INSTALL COMPENSATOR ASST TORQUE PER MP115-024 RECORD
1333660-1
CERTIFIED OPERATOR TORQUING +WITNESS
ISOL TEST PER AE26156/2 PARA 3.3.2.3
INSPECTION MONITOR TEST
OBTAIN SIGNAL PROCESS ASSY
1331200-1-SPN
REMOVE CCAS FROM CARD CAGE STORE IN ESD CONTAINER
INSTALL S/G PROCESS CARD CAGE DO NOT TORQUE SCREWS
ROUTE AND TEMPORARILY SECURE WIRE HARNESS BRANCHES TO CARD CAGE
INSERT I/O CARDS INTO CARD CAGE DO NOT ENGAGE CONNECTORS
OBTAIN DC/AC CONV REMOVE TEMP TEST CONNECTOR ING & 19 WIRES
1331203-1
MONITOR AND FINAL INSPECT A/T
GOV REP
IN PROCESS STORES
INSTALL TEMP SENSORS T/B BOARD WIRE MOUNTS RF SHELF
RECORD TEMP SENSOR S/N ON S/O AND LOG BOOK
SOLDER TEMP SENSORS TO TERMINAL BOARD
WIRE AND TAG RF SHELF WIRE PER WIRE LIST
INSTALL FEEDHORN ISOLATOR ATTENUATOR AND TEST CABLES
INSPECTION MONITOR TEST
FINAL INSPECT ISSUE A/T
IN PROCESS STORES
TEST PER AE26156/2 PARA 4.1
INSPECTION MONITOR TEST
FINAL INSPECT ISSUE A/T
IN PROCESS STORES
ISSUE S/O MILR 881 MAT. TO DRG AND KIT
INSULATION BLANKET ASST 1331253-1
CUT ALL 5 MIL FIBER LAYERS FIT CHECK ON MOCKUP
MARK LOCATION FOR VELCRO ASTHERS PER TEMPLATE NOMAL SIDE
CUT FASTENERS TO SIZE PER TEMPLATE
TAPE FASTENERS AT MARKED LOCATION FOR BONDING
CUT OUTER LAYERS FIT CHECK ON MOCKUP
INSPECT FIT CHECK
LAY-UP LAYERS CUT PER TEMPLATES
STACK AND I.D. LAYERS PER DASH NO.
TEMPORARILY PIN AL LAYERS TOGETHER
FORM TO FIT TRIM PUNCH RETAINER AND GROUND STRAP HOLES PER TEMPLATE
TAPE EDGES
INSTALL GND STRAP AND SHIMS FILLER AND SUPPORTS
INSPECT PER DRG & II
GOV REP
CLEAN BLANKETS PER RI-34499 PARA 3.5.6
VACUUM BAKE BLANKETS
INSPECT SOLDER PER NHB 5300.4(3A-1)
GOV REP
ROUTE WIRES ON CHASSIS
MOUNT CONNECTORS AND BACKPLANE UNITS CHASSIS
SPOT TIE WIRES
INSPECT ASSY PER NHB 5300.4(3A-1)
GOV REP
INSERT CCAS INTO CARD CAGE
PERFORM PRELIMINARY SUBSYSTEM TEST PER AE26902/3
MONITOR
GOV REP
TEST PER AE26156/2 3.3.6
MONITOR TEST
ROUTE UNIT TO TEST
REMOVE CCAS FROM ASSEMBLY
PROCESS CHECK ASSY REWORK AS REQ'D
INSTALL CCAS INTO ASSY
REVIEW S/O FINAL INSPECT ISSUE A/T CLOSE S/O
GOV REP
INSTALL NOMINAL I & C COMPONENTS
INSPECT SOLDER PER NHB
GOV REP
INSERT CCAS INTO ESD PROTECTIVE CONTAINER
23 EA CCAS PER CCA
CLEAN BOARDS PER MP106-808
INSPECT BOARD FOR CLEANLINESS
MASK FOR CONFORMAL COAT
CONFORMAL COAT BOARD FOR MPT 04-022
REVIEW S/O FINAL INSPECT BOARDS ISSUE A/T CLOSE S/O
GOV REP
S/G PROCESS CCAS 23 EACH
DETECTOR PREAMP CCA 1 EACH
PRELIMINARY ISOLATION TEST AE26156/2
INSPECTION
DETECTOR PREAMP TEST PER AE26902/3 3.11.3
INSPECTION MONITOR TEST
INSTALL RF DETECTOR ON BULKHEAD CONNECTOR AND INTERNAL COAX
INSPECTION TO MONITOR TORQUING
TEST PER AEAE26156/2 3.11.4 3.11.7
MONITOR COMPLETION OF AE26902/3
REMOVE CCA FROM ASSY
PROCESS CHECK ASSY REWORK AS REQUIRED
INSTALL CCA
FINAL INSPECT ISSUE A/T CLOSE S/O
GOV REP
1331300-1
NOTE: ROUTE UNIT TO TEST TO PERFORM THE SUCCEEDING FOUR OPERATIONS
NOTE: INSTALL SHORTING PLUGS ON BULKHEAD CONNECTOR PRIOR TO INSTALLING DETECTORS


6
5
4
CUT WIRES TO PROPER LENGTH & REWIRE P901 USING ALSO CONNECTOR
CONTINUITY CHECK ON REWIRE OF P901
INSPECTION TO MONITOR CONTINUITY CHECK
INSPECT SOLDERING OF P901
GOV REP
TEMPORARILY INSTALL DC/DC CONV
ROUTE TOTAL ASSY TO TEST
PERFORM ALL ISOLATION TESTS PER AE26156/2
MONITOR TEST
SYSTEM INTEGRATION TEST PER AE26156/2
MONITOR TEST
INSPECT PREAMP DETECTOR ASS'S OLATE FROM RF SHELF
1331300-4-SPR
INSTALL TAC COMPS ON DC/DC CONV
IN PROCESS STORES
ISSUE S/O KWIP MAT RIALS TI BMG S.KIT 1331200-1
INSTALL AND BOND VELCRO FASTENER FOR THERMAL BLANKET PER MAT
FIT CHECK USING TEST THERMAL BLANKET
INSPECTION VERIFY FIT CHECK
ROUTE TO AMSH-A2 FINAL ASST (1331200-1 SHOP ORDER
THERMAL TAPE APPLICATION
REMOVE SIG PROCESS ASST DET PREAMP ASST AND PANELS
INSTALL SIG PROCESS ASST DET PREAMP ASST AND PANELS
SIG PROC ASST
DETECTOR PREAMP ASST
APPLY THERMAL TAPE PER MAT'L SPEC'S-032 GOLD, ALUM & SILVER
INSPECT TAPING PER AII-0031
GOV REP
PACKAGE IN AIR TIGHT CONTAINER W/ DESSICANT & NITROGEN PURGE
REVIEW S/O FINAL INSPECT PACKAGING ISSUE A/T
GOV REP
ROUTE BLANKETS TO SHIPPING CONFIG S/O FOR INIT
IN PROCESS STORES
REMOVE TEST BLANKET ROUTE TO S/O TO CLEAN & VACUUM BAKE
1331120-1
THERMAL BALANCE AE26151/2 EM ONLY
INSPECTION
THERMAL VAC CALIBRATION AE26156/6
INSPECT UNIT VERIFY COMPLETION OF TEST AND DATA
GOV REP
FINAL COMPREHENSIVE PERFORMANCE TEST AE26156/4
INSPECTION REVIEW DATA
GOV REP
DRESS SYSTEM FOR CENTER OF GRAVITY & WT TEST PER MAT
DELIVER SYSTEM TO ENV LAB HANDLING PER AE-29357
SYMBOLS KEY
ASSEMBLY OPERATION
PC MOVE OPERATION
OUTSIDE PROCESSING
6
5
4

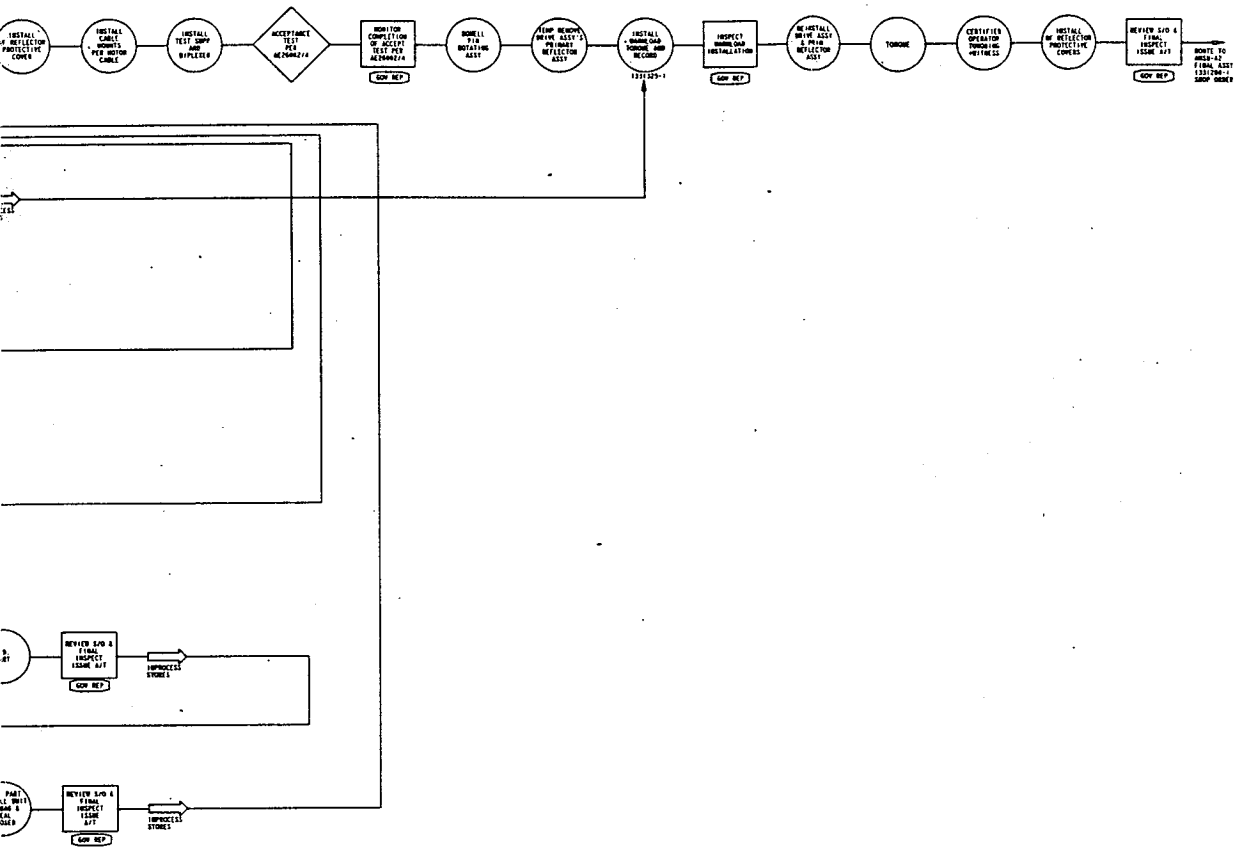

REVISIONS
REV
DESCRIPTION
DATE
APPROVED
TEST PER AE26156/2
MONITOR TEST
VERIFY ISOLATION OF PREAMP DETECTOR BOX FROM RF SHELF
CONTINUE TEST PER AE26156/2 OFFSET AND GAIN ADJUST
MONITOR TEST
GOV REP
INSTALL TAC COMPS ON DC/DC CONV AND PREAMP DETECTOR
TEST PER AE26156/2
MONITOR TEST
GOV REP
NOTE: INSTALL SHORTING PLUGS PRIOR TO ISOLATION TEST
INSTALL DC/DC CONVERTER AND PREAMP DETECTOR ON UNIT
PERFORM ISOLATION TEST OF PREAMP DETECTOR
MONITOR TEST
COMPLETE TEST PER AE26156/2
INSPECTION TO VERIFY COMPLETION OF TEST REVIEW DATA
PERFORM EMI EVAL COMPREHENSIVE PERFORMANCE TEST (CPT) PER AE26156/4
VERIFY COMPLETION OF TEST DATA
EMS MODEL ONLY
CPT PER 26156/4
MONITOR TEST AND ISSUE REVIEW S/O
GOV REP
MOMENTUM COMPENSATION TEST AE26151/3
VERIFY COMPLETION OF TEST AND DATA
GOV REP
MAGNETIC FIELD TEST AE26151/5
VERIFY COMPLETION OF TEST AND DATA
GOV REP
EMI/RFI & MAGNETIC TEST* AE26151/5
VERIFY COMPLETION OF TEST AND DATA
GOV REP
DRESS SYSTEM FOR VIBRATION TEST & DELIVER TO EMV LAB
REINSTALL UNIT ON VIB TABLE & TORQUE BOLTS PER AE26357 PRE VIB ART ALIGN CHECK PER AE26151/1
INSPECTION WITNESS TORQUING ART ALIGN CHECK
"X" AXIS VIB PER TABLE II OF AE26151/1 & POST VIB ATR ALIGN CHECK
PERFORM CONTINUITY & ISOLATION CHECK PER AS25151/1
MONITOR TEST & POST VIB ART ALIGN CHECK VISUAL UNIT FOR POSSIBLE CAMAGE
GOV REP
REMOVE UNIT FROM VIB TABLE INSTALL FLAT VIBRATION FIXTURE
PERFORM LPT PER AE26156/4
VERIFY COMPLETION OF TEST DATA
GOV REP
REINSTALL UNIT ON VIB TABLE & TORQUE BOLTS PER AE26357 PRE VIB ART ALIGN CHECK PER AE25156/1
"Y" AXIS VIB PER TABLE II OF AE26151/1 & POST VIB ATR ALIGN CHECK
PERFORM CONTINUITY & ISOLATION CHECK PER AE26151/1
MONITOR TEST & POST VIB ART ALIGN CHECK VISUAL UNIT FOR POSSIBLE DAMAGE
GOV REP
REMOVE UNIT FROM VIB TABLE POSITION VIB FIXT FOR "Z" AXIS
PERFORM LPT PER AE26156/4
VISUAL INSPECT INSIDE OF UNIT FOR POSSIBLE DAMAGE FROM VIBRATION
GOV REP
REINSTALL UNIT ON VIB TABLE & TORQUE BOLTS PER AE26357 PRE VIB ART ALIGN CHECK PER AE26151/1
INSPECTION WITNESS TORQUING ART ALIGN CHECK
"Z" AXIS VIB PER TABLE II OF AE26151/1 & POST VIB ATR ALIGN CHECK
PERFORM CONTINUITY & ISOLATION CHECK PER AE26151/1
MONITOR TEST & POST VIB ART ALIGN CHECK VISUAL UNIT FOR POSSIBLE DAMAGE
GOV REP
REMOVE UNIT FROM VIBRATION TABLE
REMOVE TOP PANEL & FRONT PANEL FOR VISUAL INSPECT
VISUAL INSPECT INSIDE OF UNIT FOR POSSIBLE DAMAGE FROM VIBRATION
GOV REP
REINSTALL PANELS & TORQUE SCREWS CLEAN EXTERIOR OF UNIT
30D POST VIBRATION TEST PERFORM 5HD CPT TEST
VERIFY COMPLETION OF TEST DATA
GOV REP
INSTALL UNIT INTO TEMP CYCLE CHAMBER
THERMAL CYCLING AE26157/7
MONITOR TEST & VERIFY COMPLETION OF TEST AND DATA
GOV REP
PERFORM SUB CPT PER AE26156/4
INSPECT UNIT, VERIFY COMPLETION OF TEST & DATA
GOV REP
INSTALL TC AND TEST THERMAL BLANKETS
INSTALL UNIT INTO CALIB TEST FIXTURE PER AE26357
PERFORM FUNCTIONAL CHECK OF UNIT & CALIB FIXTURE
INSTALL SYSTEM ON WT /CG FIXTURE TORQUING PER AE26357
INSPECTION WITNESS OF TORQUING
PERFORM CG/WT TEST PER AE-25151/3
MONITOR TEST VERIFY COMPLETION OF TEST DATA
GOV REP
REMOVE SYSTEM FROM FIXTURE HANDLING TO BE PER AE26357
DELIVER SYSTEM TO BLDG 53 HANDLING TO BE PER AE26357
CLEAN UNIT
INSPECT UNIT VERIFY COMPLETION OF ALL DOCUMENTATION SHOP ORDER ISSUE A/T FOR 1331290-1 CLOSE S/O
IN PROCESS STORES
ISSUE S/O MAKE S/A (1 ONG & KIT 1338394-1
SHIPPING CONT S/O 1338394-1
CLEAN SHIPPING CONTAINER & UNIT PER AE26493
INSPECT UNIT FOR CLEANLINESS
GOV REP
INSTALL UNIT & MISC ITEMS INTO SHIPPING CONT PER DWG 1338394-1
FINAL INSPECT REVIEW S/O ISSUE A/S CLOSE OUT S/O 00250
GOV REP
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCE
DECIMALS ANGLES
.XX ± .03 ± 2
.XXX ± .010
SURFACE FINISH
DO NOT SCALE DRAWING
DRAWING INTERPRETATION PER
DOD-D-1000
CONTR NO. NAS 5-32314
DRAWN J.COLEGROVE 86/03/09
CHECK
ISSUED
STRESS
MATERIALS
PRODUCTION
DESIGN ACTIVITY
GenCorp Aerojet
Aerojet ElectroSystems
PO Box 296, Azusa, CA 91702
TITLE
FLOW PLAN, FABRICATION AND FINAL ASSEMBLY AMSU-A2
SIZE J
CAGE CODE 70143
DWG NO. 1338412
SCALE NONE
REL DATE
WT
SHEET 1 OF 1
3-26-96
1338412
3
2
1
H
G
F
E
D
C
A

NOTES:

KLM/AMSU-A2
ANTENNA ASSEMBLY
1331210-1



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



SYMBOLS KEY

- ASSEMBLY OPERATION
- TEST OPERATION
- PC MOVE OPERATION
- GOV REP — GOVERNMENT REPRESENTATIVE
- OUTSIDE PROCESSING
- INSPECTION OPERATION

PART DASH NO	NEXT ASSY	FINAL ASSY	NEXT ASSEMBLY APPLICATION	USED ON
	1331329	1331329		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCE
DECIMALS .XX ± .03 .XXX ± .010
ANGLES ± 2°
SURFACE FINISH ✓
DO NOT SCALE DRAWING

DRAWING INTERPRETATION PER DOD-D-1000

CONTR NO	NAS 5-32314
DRAWN	J. COLEGROVE 86/03/09
CHECK	
DESIGN	
STRESS	
MATERIALS	
PRODUCTION	
DESIGN ACTIVITY	
Q A	

3-26-86

GenCorp Aerojet — Electronics Systems Division, PO Box 296, Azusa, CA 91702

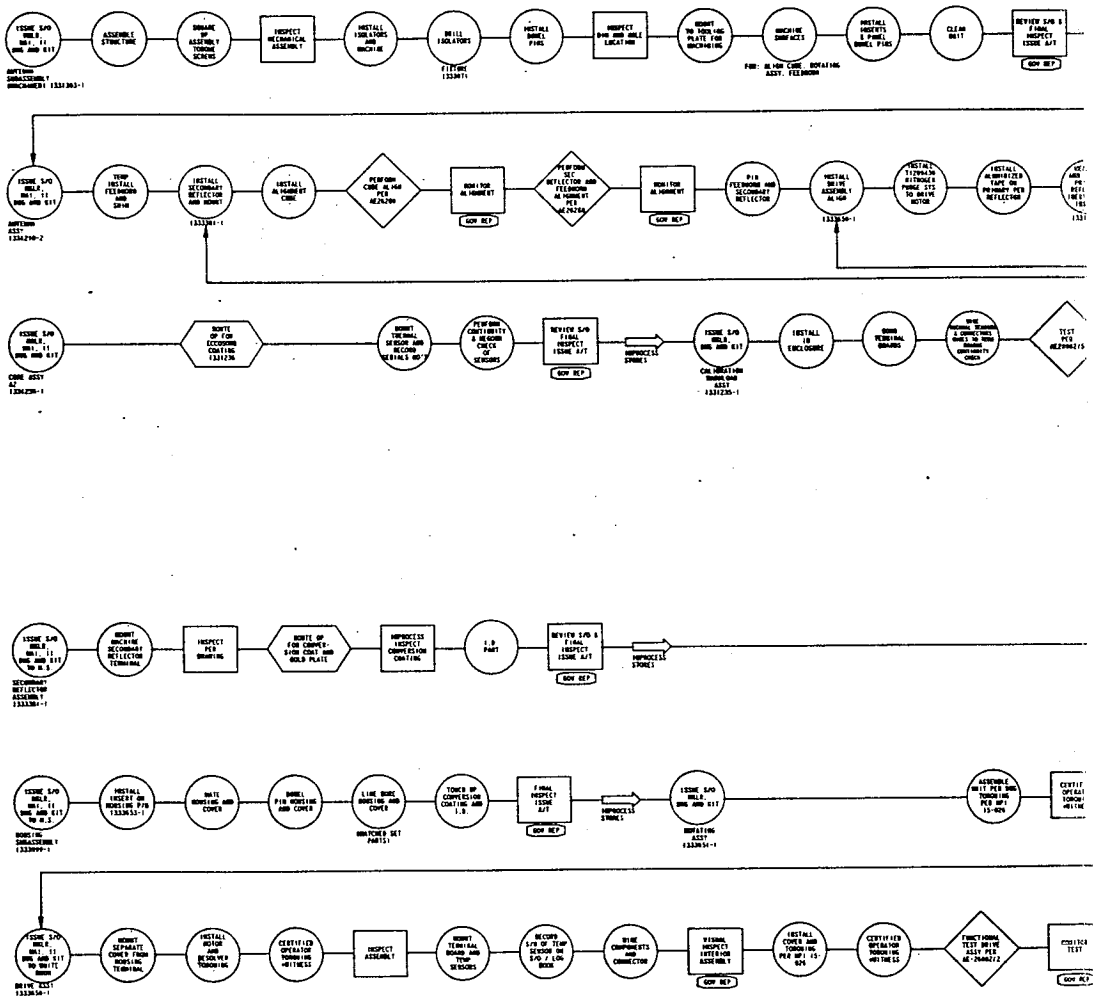
TITLE: FLOW PLAN, ANTENNA ASSEMBLY AMSU-A2

SIZE	CAGE CODE	DWG NO
E	70143	1338413

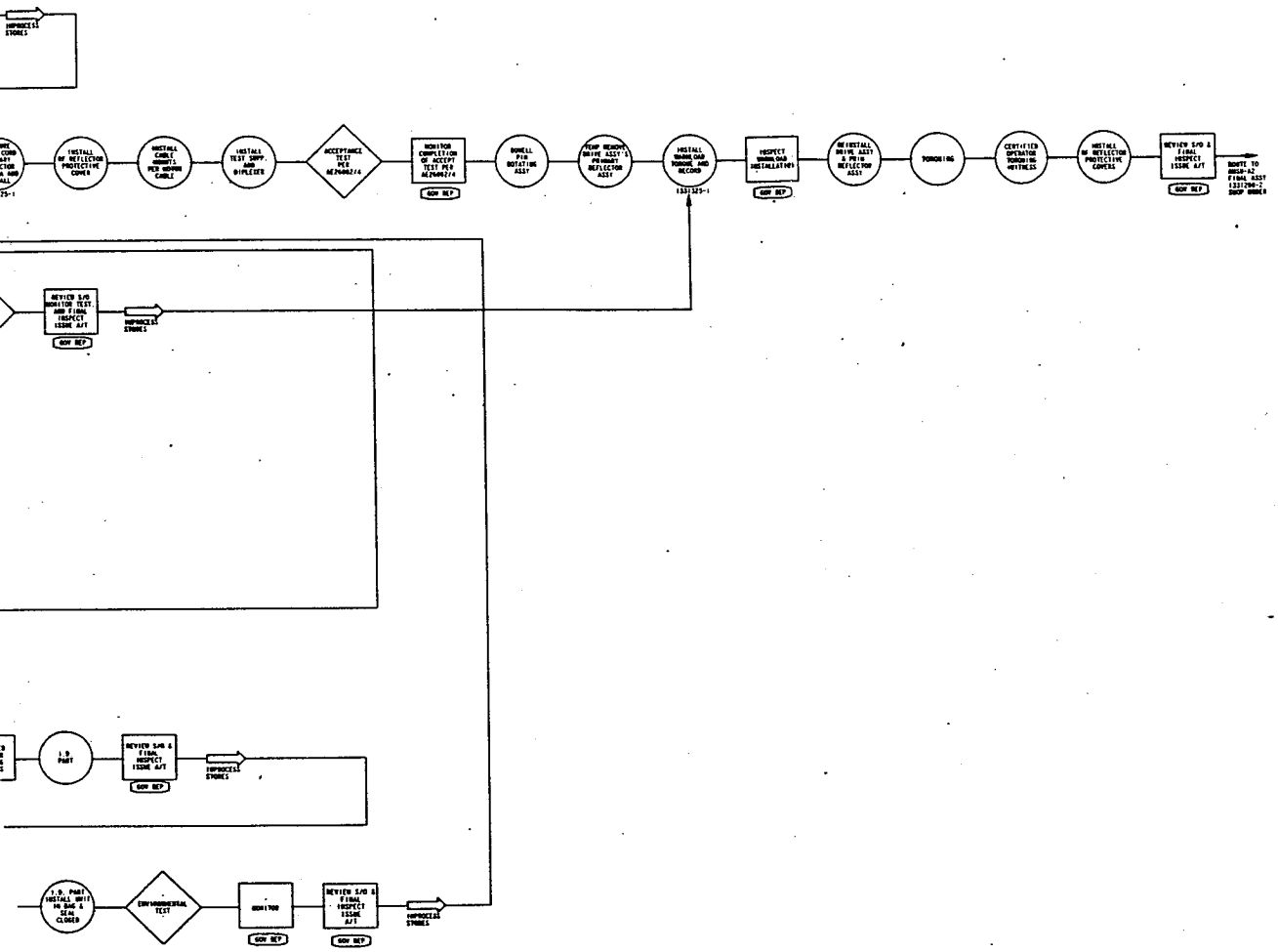
SCALE NONE	REL DATE	WT	SHEET 1 OF 2

DWG NO 1338413 REV

METSAT/AMSU-A2
ANTENNA ASSEMBLY
1331210-2



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

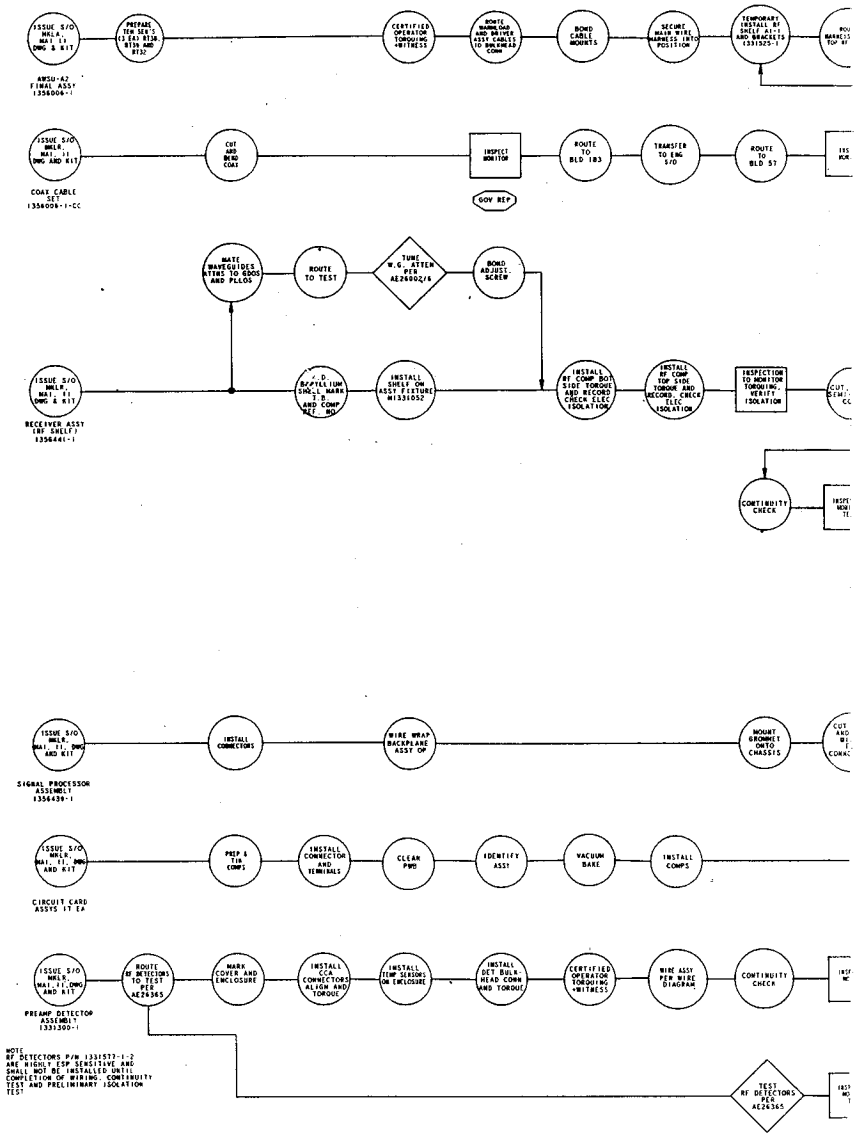


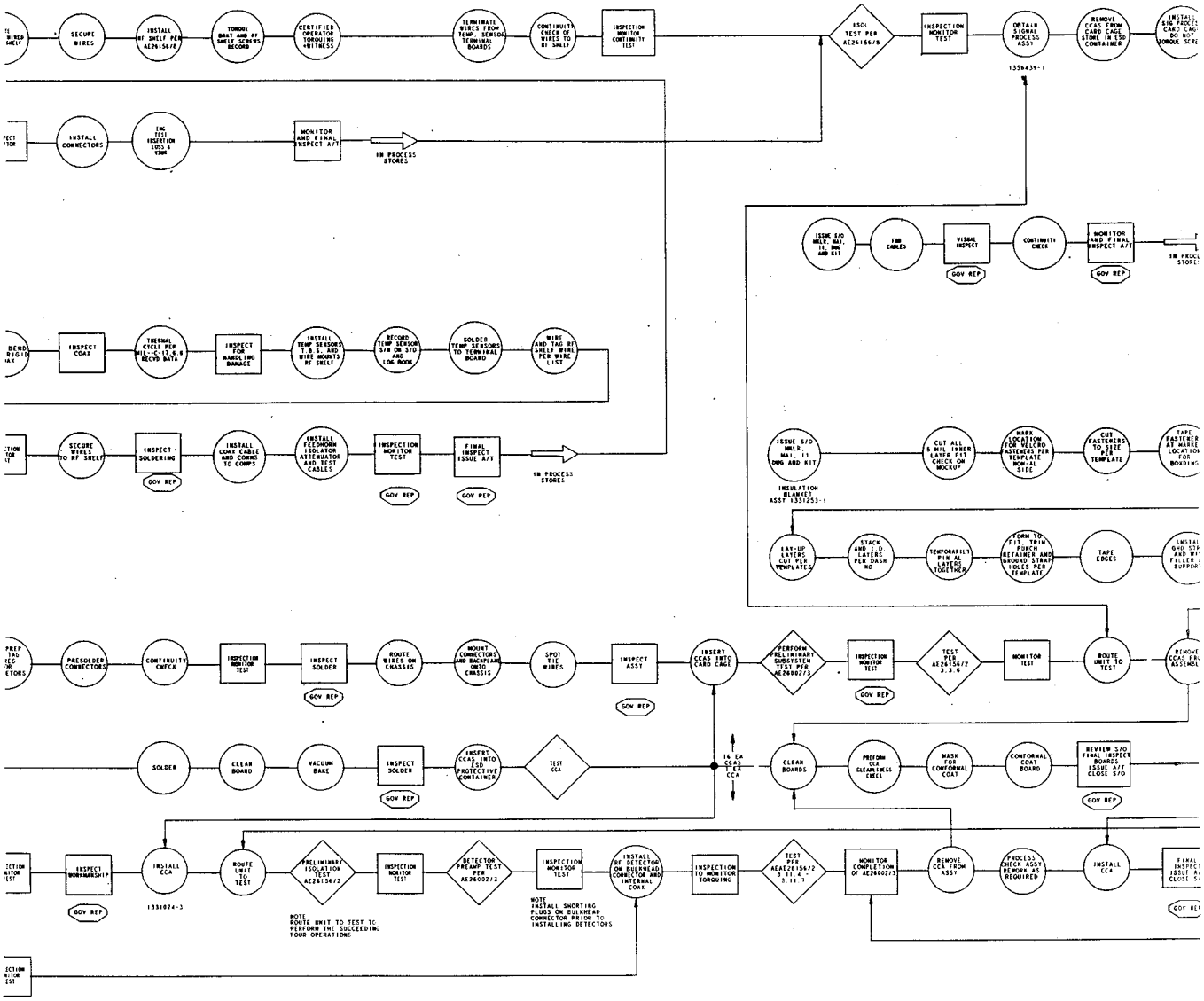
GENCORP AEROJET Electronic Systems Division PO Box 296 Azusa, CA 91702	SIZE E	CAGE CODE 70 [illegible]	DWG NO. 1338413
	SCALE N/A		SHEET 2 2

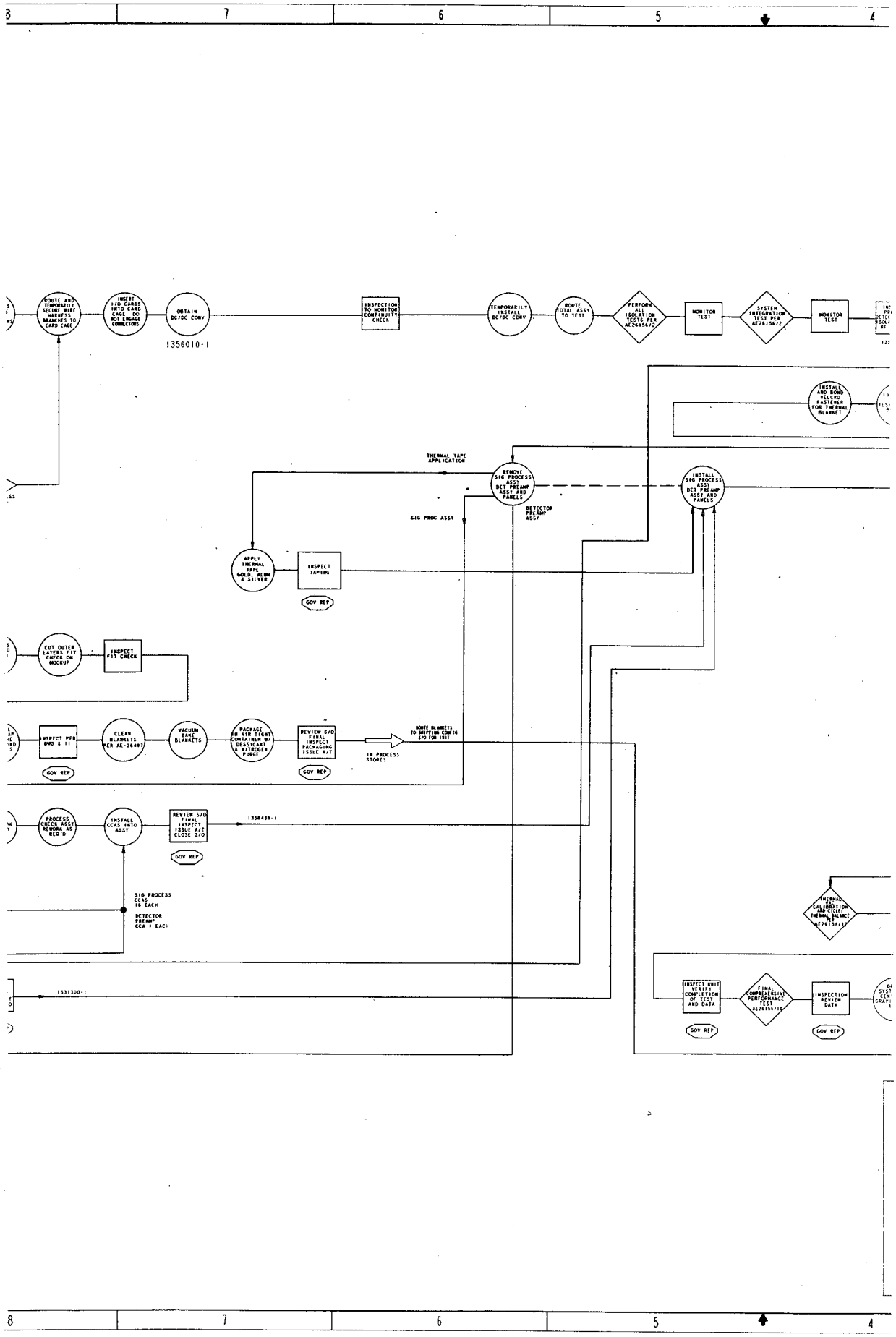
1338413 REV 2

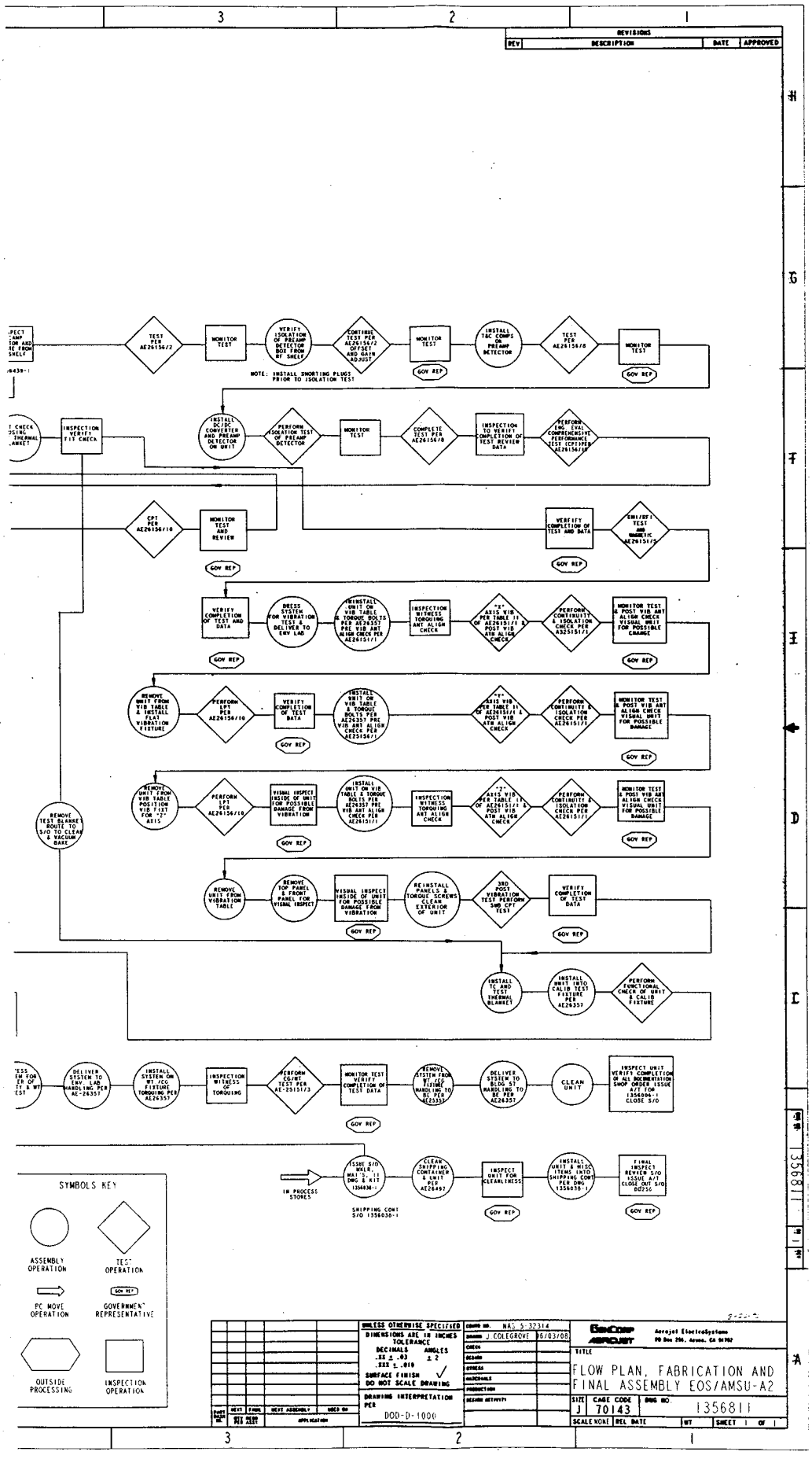
NOTES:

EOS/AMSU-A2
FINAL ASSEMBLY
1356006-1

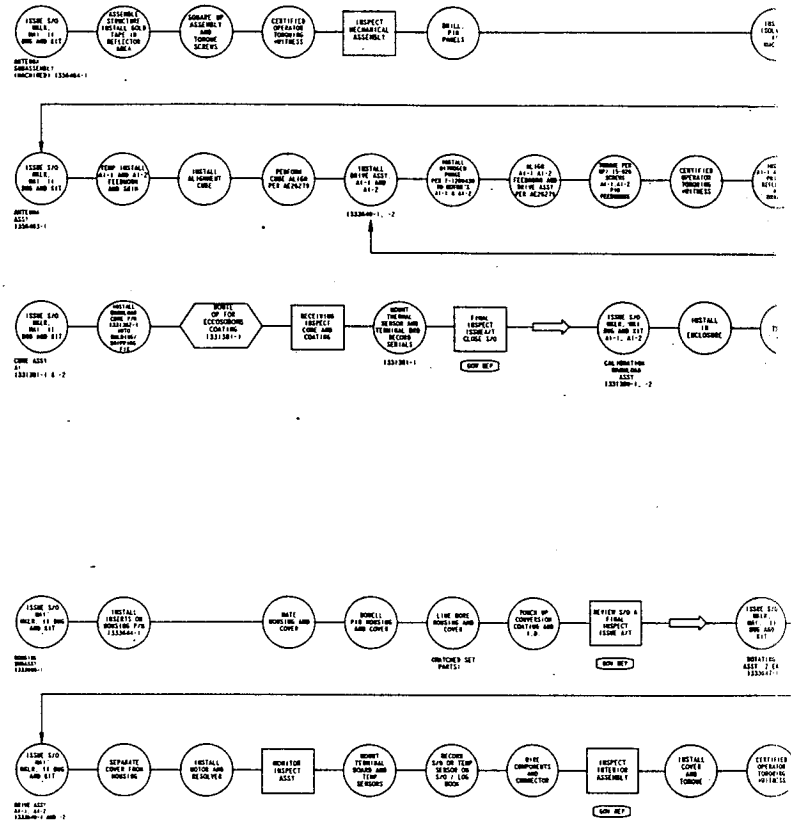



SECURE WIRES
INSTALL RF SHELF PER AE26156/8
TORQUE BRKT AND RF SHELF SCRWS RECORD
CERTIFIED OPERATOR TORQUING +WITNESS
TERMINATE WIRES FROM TEMP SENSOR TERMINAL BOARDS
CONTINUITY CHECK OF WIRES TO RF SHELF
INSPECTION MONITOR CONTINUITY TEST
ESOL TEST PER AE26156/8
INSPECTION MONITOR TEST
OBTAIN SIGNAL PROCESS ASSY
1356439-1
REMOVE CCAS FROM CARD CAGE STORE IN ESD CONTAINER
INSTALL CONNECTORS
IMG TEST INSERTION LOSS & VSWR
MONITOR AND FINAL INSPECT A/T
IN PROCESS STORES
ISSUE S/O MMLR, MAT'L IN DWG AND KIT
CABLES
VISUAL INSPECT
GOV REP
CONTINUITY CHECK
MONITOR AND FINAL INSPECT A/T
GOV REP
INSPECT COAX
THERMAL CYCLE PER MIL-C-17,5,6 RECVD DATA
INSPECT FOR HANDLING DAMAGE
INSTALL TEMP SENSORS T.B.S. AND WIRE MOUNTS RF SHELF
RECORD TEMP SENSOR S/N ON S/O AND LOG BOOK
SOLDER TEMP SENSORS TO TERMINAL BOARD
WIRE AND TAG RF SHELF WIRE PER WIRE LIST
SECURE WIRES TO RF SHELF
INSPECT - SOLDERING
GOV REP
INSTALL COAX CABLE AND CONNS TO COMPS
INSTALL FEEDHORN ISOLATOR, ATTENUATOR AND TEST CABLES
INSPECTION MONITOR TEST
GOV REP
FINAL INSPECT ISSUE A/T
GOV REP
IN PROCESS STORES
ISSUE S/O MMLR, MAT'L IN DWG AND KIT
INSULATION BLANKET ASST 1331253-1
CUT ALL 5 MIL INNER LAYER FIT CHECK ON MOCKUP
MARK LOCATION FOR VELCRO FASTENERS PER TEMPLATE NON-AL SIDE
CUT FASTENERS TO SIZE PER TEMPLATE
LAY-UP LAYERS CUT PER PMPLATES
STACK AND I.D. LAYERS PER DASH NO
TEMPORARILY PIN AL LAYERS TOGETHER
FORM TO FIT, TRIM PUNCH RETAINER AND GROUND STRAP HOLES PER TEMPLATE
TAPE EDGES
PRESOLDER CONNECTORS
CONTINUITY CHECK
INSPECTION MONITOR TEST
INSPECT SOLDER
GOV REP
ROUTE WIRES ON CHASSIS
MOUNT CONNECTORS AND BACKPLANE ONTO CHASSIS
SPOT TIE WIRES
INSPECT ASSY
GOV REP
INSERT CCAS INTO CARD CAGE
PERFORM PRELIMINARY SUBSYSTEM TEST PER AE26002/3
INSPECTION MONITOR TEST
GOV REP
TEST PER AE26156/2 3.3.6
MONITOR TEST
ROUTE UNIT TO TEST
SOLDER
CLEAN BOARD
VACUUM BAKE
INSPECT SOLDER
GOV REP
INSERT CCAS INTO ESD PROTECTIVE CONTAINER
TEST CCA
16 EA CCAS 3 EA CCA
CLEAN BOARDS
PREFORM CCA CLEANLINESS CHECK
MASK FOR CONFORMAL COAT
CONFORMAL COAT BOARD
REVIEW S/O FINAL INSPECT BOARDS ISSUE A/T CLOSE S/O
GOV REP
INSPECT WORKMANSHIP
GOV REP
INSTALL CCA
1331074-3
ROUTE UNIT TO TEST
PRELIMINARY ISOLATION TEST AE26156/2
NOTE ROUTE UNIT TO TEST TO PERFORM THE SUCCEEDING FOUR OPERATIONS:
INSPECTION MONITOR TEST
DETECTOR PREAMP TEST PER AE26002/3
INSPECTION MONITOR TEST
NOTE INSTALL SHORTING PLUGS ON BULKHEAD CONNECTOR PRIOR TO INSTALLING DETECTORS
INSTALL RF DETECTOR ON BULKHEAD CONNECTOR AND INTERNAL CONX
INSPECTION TO MONITOR TORQUING
TEST PER AEAE26156/2 3.11.4 - 3.11.7
MONITOR COMPLETION OF AE26002/3
REMOVE CCA FROM ASSY
PROCESS CHECK ASSY REWORK AS REQUIRED
INSTALL CCA


ROUTE AND TEMPORARILY SECURE WIRE HARNESS BRANCHES TO CARD CAGE
INSERT I/O CARDS INTO CARD CAGE DO NOT ENGAGE CONNECTORS
OBTAIN DC/DC CONV
1356010-1
INSPECTION TO MONITOR CONTINUITY CHECK
TEMPORARILY INSTALL DC/DC CONV
ROUTE TOTAL ASST TO TEST
PERFORM ALL ISOLATION TESTS PER AE26156/2
MONITOR TEST
SYSTEM INTEGRATION TEST PER AE26156/2
MONITOR TEST
INSTALL AND BOND VELCRO FASTENER FOR THERMAL BLANKET
THERMAL TAPE APPLICATION
REMOVE S16 PROCESS ASST DET PREAMP ASST AND PANELS
DETECTOR PREAMP ASSY
S16 PROC ASST
INSTALL S16 PROCESS ASST DET PREAMP ASST AND PANELS
APPLY THERMAL TAPE GOLD, ALUM & SILVER
INSPECT TAPING
GOV REP
CUT OUTER LAYERS FIT CHECK ON MOCKUP
INSPECT FIT CHECK
INSPECT PER DWG & IT
GOV REP
CLEAN BLANKETS PER AE-26487
VACUUM BAKE BLANKETS
PACKAGE IN AIR TIGHT CONTAINER W/ DESICCANT & NITROGEN PURGE
REVIEW S/O FINAL INSPECT PACKAGING ISSUE A/T
GOV REP
ROUTE BLANKETS TO SHIPPING CONFIG S/O FOR 1811
IN PROCESS STORES
PROCESS CHECK ASST REWORK AS REQ'D
INSTALL CCAS INTO ASSY
REVIEW S/O FINAL INSPECT ISSUE A/T CLOSE S/O
GOV REP
1358439-1
S16 PROCESS CCAS 16 EACH
DETECTOR PREAMP CCA 9 EACH
1331300-1
THERMAL TEST CALIBRATION AND CYCLE/ THERMAL BALANCE AE26159/12
INSPECT UNIT VERIFY COMPLETION OF TEST AND DATA
GOV REP
FINAL COMPREHENSIVE PERFORMANCE TEST AE26159/16
INSPECTION REVIEW DATA
GOV REP

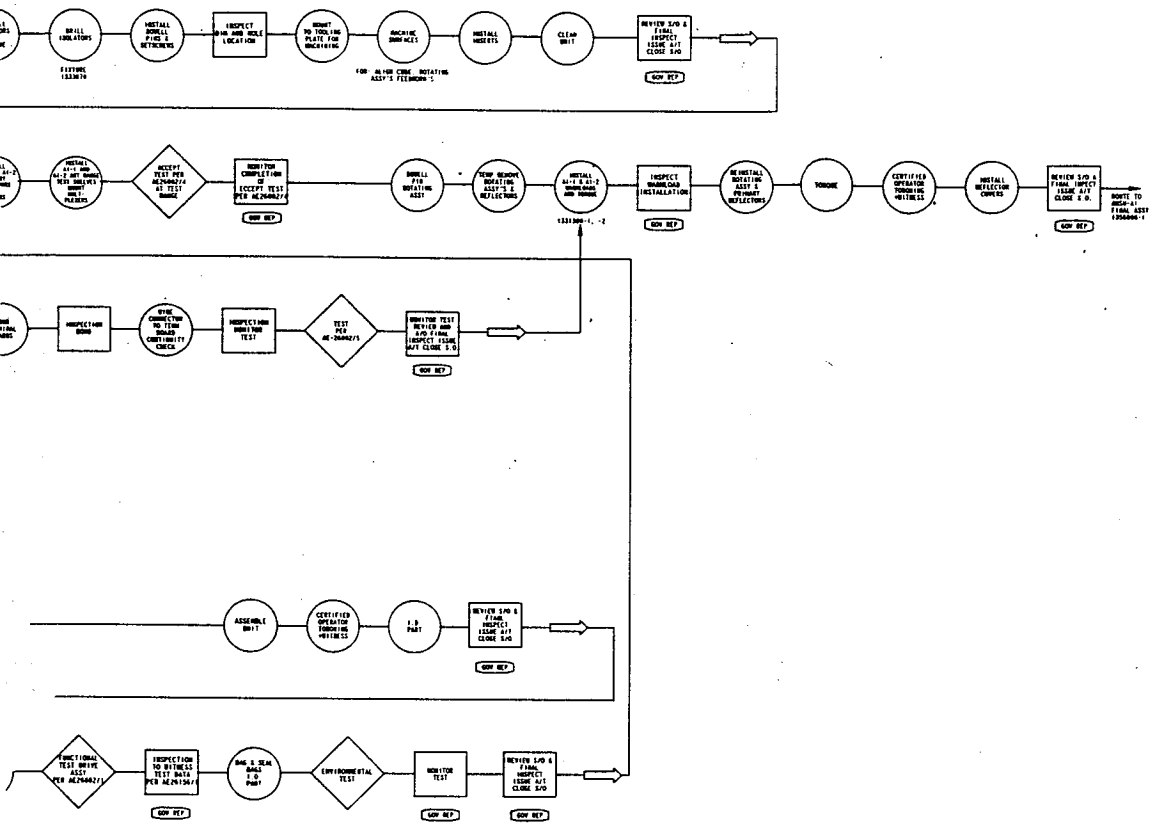

REVISIONS
REV | DESCRIPTION | DATE | APPROVED
TEST PER AE26156/2
MONITOR TEST
VERIFY ISOLATION OF PREAMP DETECTOR BOX FROM RF SHELF
CONTINUE TEST PER AE26156/2 OFFSET AND GAIN ADJUST
MONITOR TEST
GOV REP
INSTALL TAC COMPS ON PREAMP DETECTOR
TEST PER AE26156/8
MONITOR TEST
GOV REP
NOTE: INSTALL SHORTING PLUGS PRIOR TO ISOLATION TEST
INSTALL DC/DC CONVERTER AND PREAMP DETECTOR ON UNIT
PERFORM ISOLATION TEST OF PREAMP DETECTOR
MONITOR TEST
COMPLETE TEST PER AE26156/8
INSPECTION TO VERIFY COMPLETION OF TEST REVIEW DATA
PERFORM ENG EVAL COMPREHENSIVE TEST (CPT)PER AE26156/10
INSPECTION VERIFY FIT CHECK
CPT PER AE26156/10
MONITOR TEST AND REVIEW
GOV REP
VERIFY COMPLETION OF TEST AND DATA
GOV REP
EMI/RFI TEST AND MAGNETIC AE29151/5
VERIFY COMPLETION OF TEST AND DATA
GOV REP
DRESS SYSTEM FOR VIBRATION TEST & DELIVER TO ENV LAB
REINSTALL UNIT ON VIB TABLE & TORQUE BOLTS PER AE26357 PRE VIB ART ALIGN CHECK PER AE26151/1
INSPECTION WITNESS TORQUING ART ALIGN CHECK
"Z" AXIS VIB PER TABLE II OF AE26151/1 & POST VIB ATH ALIGN CHECK
PERFORM CONTINUITY & ISOLATION CHECK PER AS25151/1
MONITOR TEST & POST VIB ART ALIGN CHECK & VISUAL INSPECT FOR POSSIBLE DAMAGE
GOV REP
REMOVE UNIT FROM VIB TABLE & INSTALL FLAT VIBRATION FIXTURE
PERFORM LPT PER AE26156/10
VERIFY COMPLETION OF TEST DATA
GOV REP
INSTALL UNIT ON VIB TABLE & TORQUE BOLTS PER AE26357 PRE VIB ART ALIGN CHECK PER AE25136/1
"Y" AXIS VIB PER TABLE II OF AE26151/1 & POST VIB ATH ALIGN CHECK
PERFORM CONTINUITY & ISOLATION CHECK PER AE26151/1
MONITOR TEST & POST VIB ART ALIGN CHECK & VISUAL INSPECT FOR POSSIBLE DAMAGE
GOV REP
REMOVE UNIT FROM VIB TABLE POSITION VIB FIXT FOR "Z" AXIS
PERFORM LPT PER AE26156/10
VISUAL INSPECT INSIDE OF UNIT FOR POSSIBLE DAMAGE FROM VIBRATION
GOV REP
INSTALL UNIT ON VIB TABLE & TORQUE BOLTS PER AE26357 PRE VIB ART ALIGN CHECK PER AE26151/1
INSPECTION WITNESS TORQUING ART ALIGN CHECK
"Z" AXIS VIB PER TABLE II OF AE26151/1 & POST VIB ATH ALIGN CHECK
PERFORM CONTINUITY & ISOLATION CHECK PER AE26151/1
MONITOR TEST & POST VIB ART ALIGN CHECK & VISUAL INSPECT FOR POSSIBLE DAMAGE
GOV REP
REMOVE TEST BLANKET ROUTE TO S/O TO CLEAN & VACUUM BAKE
REMOVE UNIT FROM VIBRATION TABLE
REMOVE TOP PANEL & FRONT PANEL FOR VISUAL INSPECT
VISUAL INSPECT INSIDE OF UNIT FOR POSSIBLE DAMAGE FROM VIBRATION
GOV REP
REINSTALL PANELS & TORQUE SCREWS CLEAN EXTERIOR OF UNIT
3RD POST VIBRATION TEST PERFORM SMD CPT TEST
VERIFY COMPLETION OF TEST DATA
GOV REP
INSTALL TC AND TEST THERMAL BLANKET
INSTALL UNIT INTO CALIB TEST FIXTURE PER AE26357
PERFORM FUNCTIONAL CHECK OF UNIT & CALIB FIXTURE
DELIVER SYSTEM TO ENV LAB HANDLING PER AE-26357
INSTALL SYSTEM ON WT /CG FIXTURE TORQUING PER AE26357
INSPECTION WITNESS OF TORQUING
PERFORM CG/WT TEST PER AE-25151/3
MONITOR TEST VERIFY COMPLETION OF TEST DATA
GOV REP
REMOVE SYSTEM FROM CG/WT FIXTURE & HANDLING TO BE PER AE26357
DELIVER SYSTEM TO BLDG 57 HANDLING TO BE PER AE26357
CLEAN UNIT
INSPECT UNIT VERIFY COMPLETION OF ALL DOCUMENTATION SHOP ORDER ISSUE A/T FOR 1356094-1 CLOSE S/O
IN PROCESS STORES
ISSUE S/O WKLR, MAT'L, DWG & KIT 1356038-1
SHIPPING CONT S/O 1356038-1
CLEAN SHIPPING CONTAINER & UNIT PER AE26491
INSPECT UNIT FOR CLEANLINESS
GOV REP
INSTALL UNIT & MISC ITEMS INTO SHIPPING CONT PER DWG 1356038-1
FINAL INSPECT REVIEW S/O ISSUE A/T CLOSE OUT S/O DU256
GOV REP
SYMBOLS KEY
ASSEMBLY OPERATION
TEST OPERATION
PC MOVE OPERATION
GOV REP
GOVERNMENT REPRESENTATIVE
OUTSIDE PROCESSING
INSPECTION OPERATION
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCE
DECIMALS ANGLES
.XX ± .03 ± 2
.XXX ± .010
SURFACE FINISH
DO NOT SCALE DRAWING
DRAWING INTERPRETATION PER
DOD-D-1000
CONTR NO. NAS 5-32314
DRAWN J COLEGROVE 06/03/08
CHECK
DESIGN
STRESS
MANUFACTURING
PRODUCTION
RELIABILITY
GenCorp AEROJET
Aerojet ElectroSystems
PO Box 296, Azusa, CA 91702
TITLE
FLOW PLAN, FABRICATION AND FINAL ASSEMBLY EOS/AMSU-A2
SIZE J
CAGE CODE 70143
DWG NO. 1356811
SCALE NONE
REL DATE
WT
SHEET 1 OF 1
NEXT ASSY
USED ON
APPLICATION
1356811

NOTES:

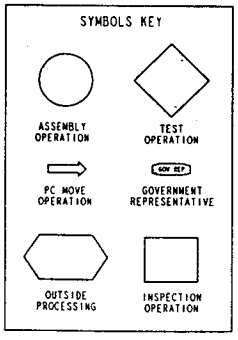


REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

EOS/AMSU-A1
ANTENNA ASSEMBLY
1356403-1



SYMBOLS KEY



PART OR DASH NO	NEXT ASSY	FINAL ASSY	NEXT ASSEMBLY	USED ON APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCE
DECIMALS .XX ± .03 .XXX ± .010
ANGLES ± 2°
SURFACE FINISH
DO NOT SCALE DRAWING
DRAWING INTERPRETATION PER
DOD-D-1000

CONTR NO	NAS 5-32314	
DRAWN	J. COLEGROVE	96-02-22
CHECK		
DESIGN		
STRESS		
MATERIALS		
PRODUCTION		
DESIGN ACTIVITY		
Q A		

3-26-96

GenCorp Aerojet — Electronic Systems Division, PO Box 296, Azusa, CA 91702

TITLE
FLOW PLAN, ANTENNA ASSEMBLY
EOS/AMSU-A1

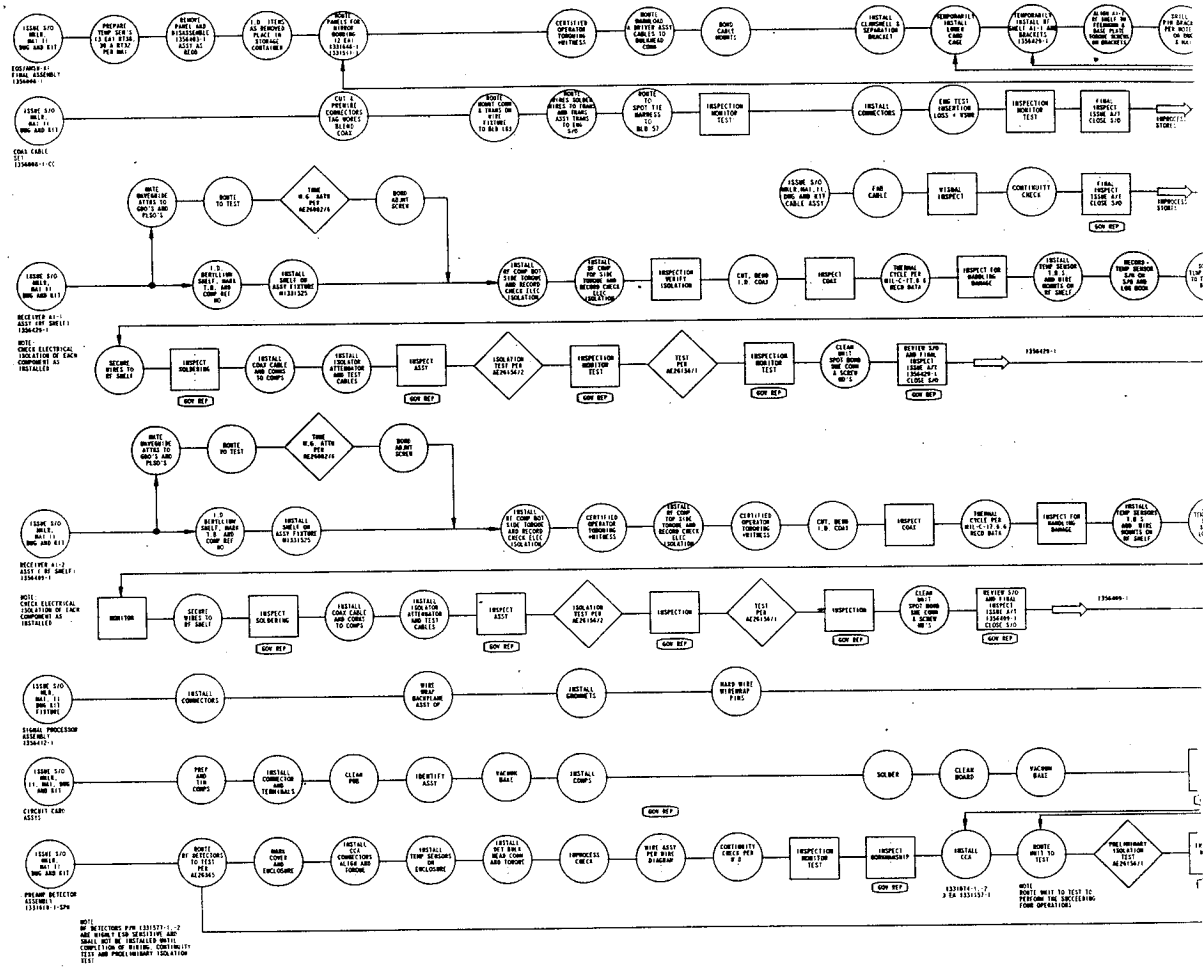
SIZE	CAGE CODE	DWG NO
E	70143	1356812

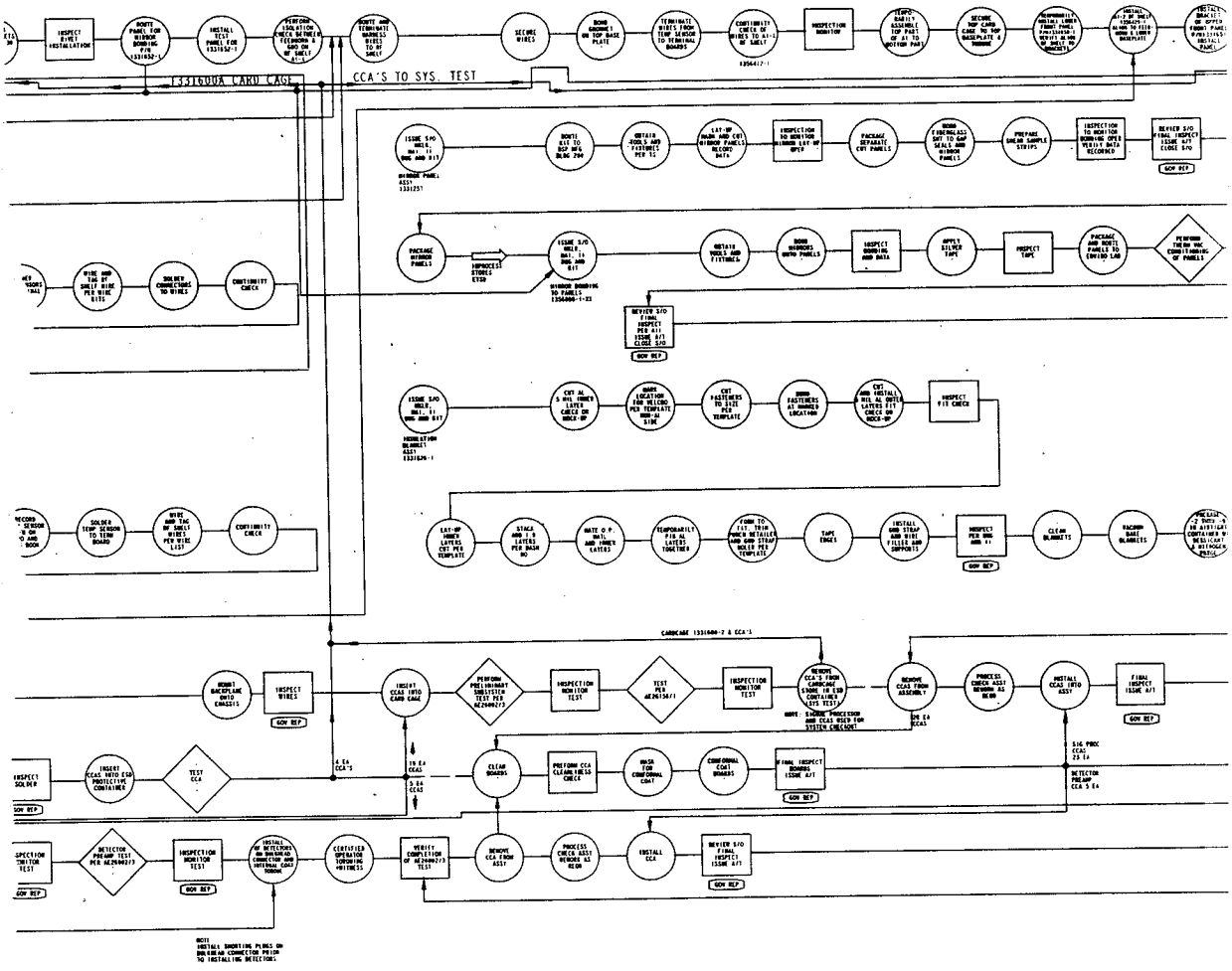
SCALE NONE | REL DATE | WT | SHEET 1 OF 1

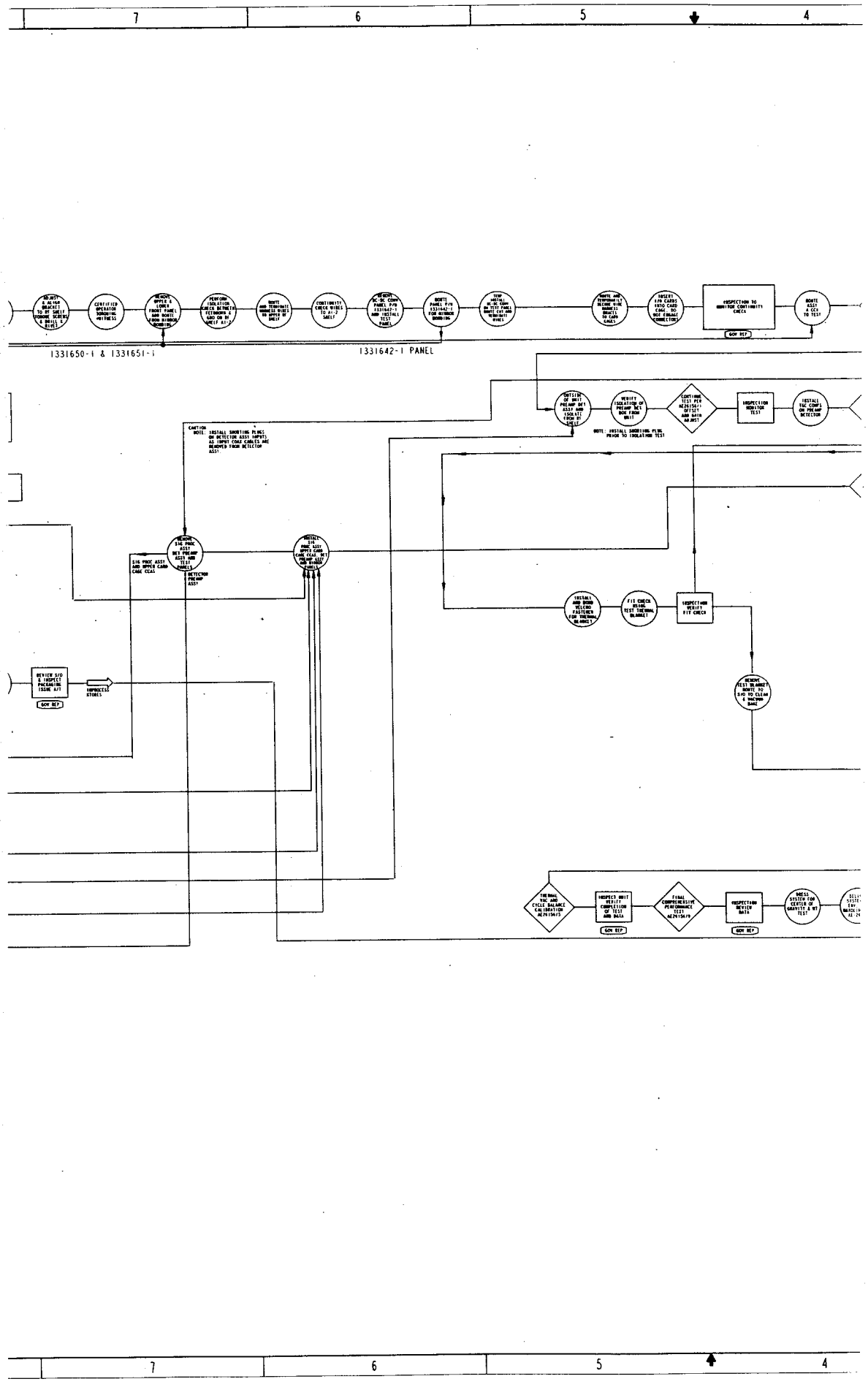
PRC UNRELEASED SHEETS

NOTES:

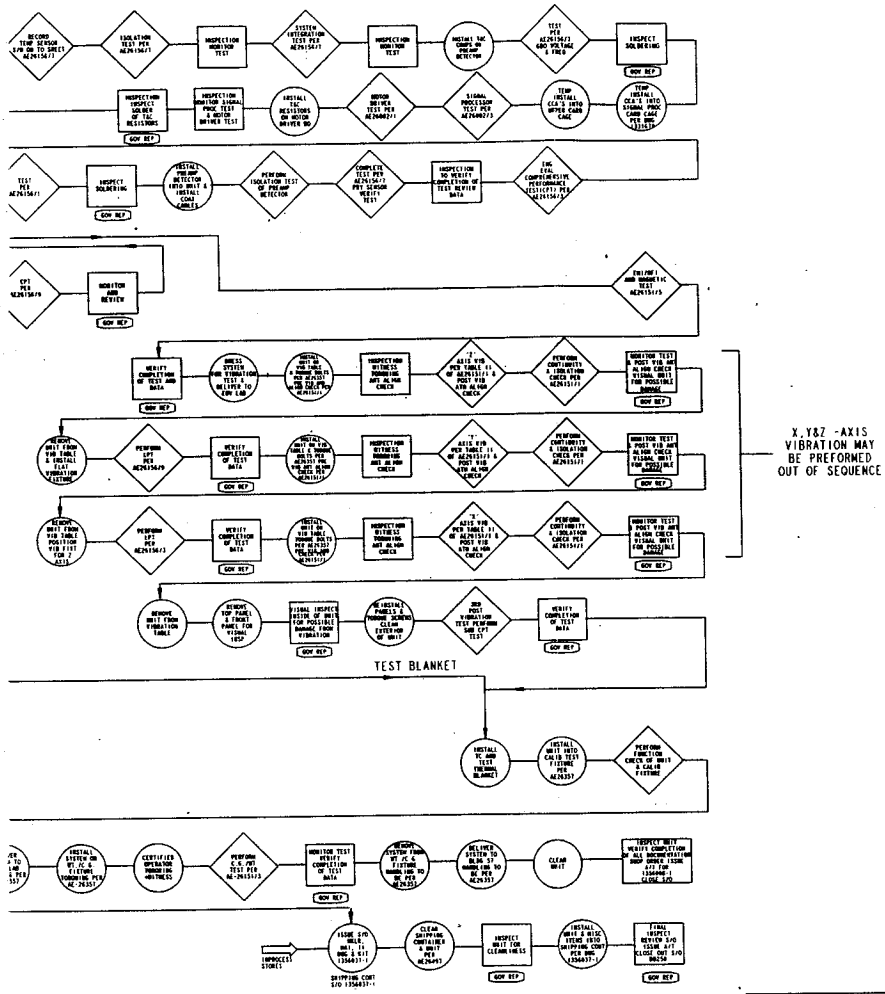
EOS/AMSU-A1
FINAL ASSEMBLY

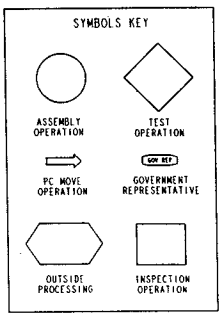



1331600A CARD CAGE
CCA'S TO SYS. TEST
INSPECT RIVET INSTALLATION
INSTALL TEST PANEL (OR 1331652-1)
SECURE WIRES
CONTINUITY CHECK
INSPECTION MONITOR
SECURE HOP CARD CASE TO TOP BASEPLATE & HARDWARE
INSPECT BACKPLANE ONTO CHASSIS
INSPECT WIRES
INSERT CCAS INTO CARD CAGE
INSPECTION MONITOR TEST
INSPECTION MONITOR TEST
REMOVE CCA'S FROM CARDCAGE (SOME IN ESD CONTAINER AFTS TEST)
REMOVE CCAS FROM ASSEMBLY
PROCESS CHECK ASST REWORK AS REQD
INSTALL CCAS INTO ASSY
FINAL INSPECT ISSUE A/I
CLEAR BOARDS
PERFORM CCA CLEARANCE CHECK
MASK FOR CONFORMAL COAT
CONFORMAL COAT BOARDS
FINAL INSPECT BOARDS ISSUE A/I
INSERT CCAS INTO ESD PROTECTIVE CONTAINER
TEST CCA
INSTALL CCA
REVIEW S/O FINAL INSPECT ISSUE A/I
CERTIFIED OPERATOR SOLDERING WITNESS
VERIFY CONDITION OF MIL-P-28809 TEST
REMOVE CCA FROM ASSY
PROCESS CHECK ASST REWORK AS REQD
DETECTOR PREAMP TEST PER MIL-P-28809
INSPECTION MONITOR TEST
NOTE: INSTALL SHORTING PLUGS ON BACKPLANE CONNECTOR PRIOR TO INSTALLING DETECTORS.


7
6
5
4
1331650-1 & 1331651-1
1331642-1 PANEL
GOV REP
CAUTION
NOTE: INSTALL SHORTING PLUGS ON DETECTOR ASSY INPUTS AS INPUT COAX CABLES ARE REMOVED FROM DETECTOR ASSY.
NOTE: INSTALL SHORTING PLUG PRIOR TO ISOLATION TEST
REVIEW S/O & INSPECT PACKAGING ISSUE A/T
IMPROCESS STORES
INSPECTION VERIFY FIT CHECK
INSPECTION MONITOR TEST
INSPECTION VERIFY COMPLETION OF TEST AND DATA
INSPECTION REVIEW DATA
GOV REP

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED





PARTS LIST NO.	NEXT	FINAL	NEXT ASSEMBLY	USED ON			
				APPLICATION			

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCE
DECIMALS ANGLES
.XX ± .03 ± 2
.XXX ± .010
SURFACE FINISH ✓
DO NOT SCALE DRAWING

DRAWING INTERPRETATION PER
DOD-D-1000

DRAWN	J. COLEGROVE	06/03/96
CHECK		
DESIGN		
STRESS		
MATERIALS		
PRODUCTION		
DESIGN ACTIVITY		

GenCorp Aerojet
Aerojet ElectroSystems
PO Box 296, Azusa, CA 91702

TITLE
FLOW PLAN, FABRICATION AND FINAL ASSEMBLY EOS/AMSU-A1

SIZE	CAGE CODE	DWG NO.
J	70143	1356813

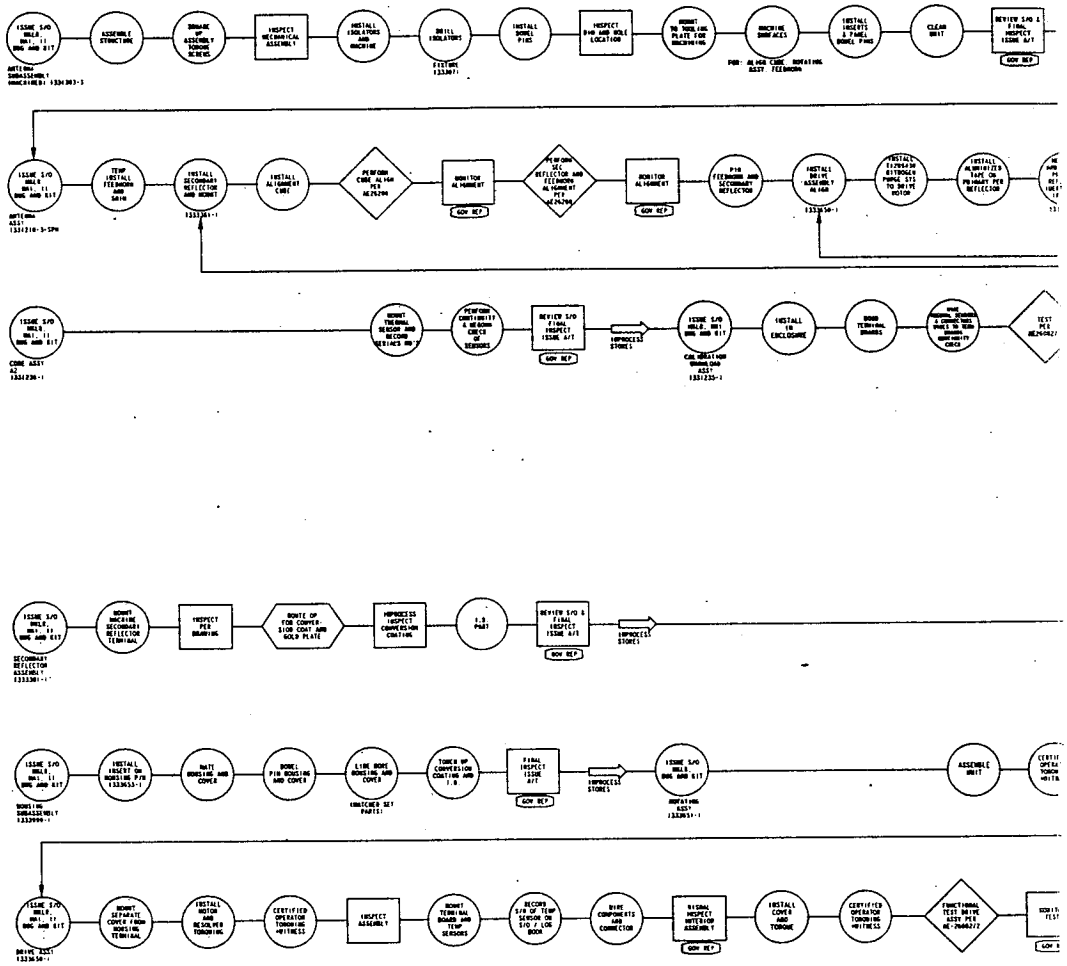
SCALE NONE | REL DATE | WT | SHEET 1 OF 1

3-26-96

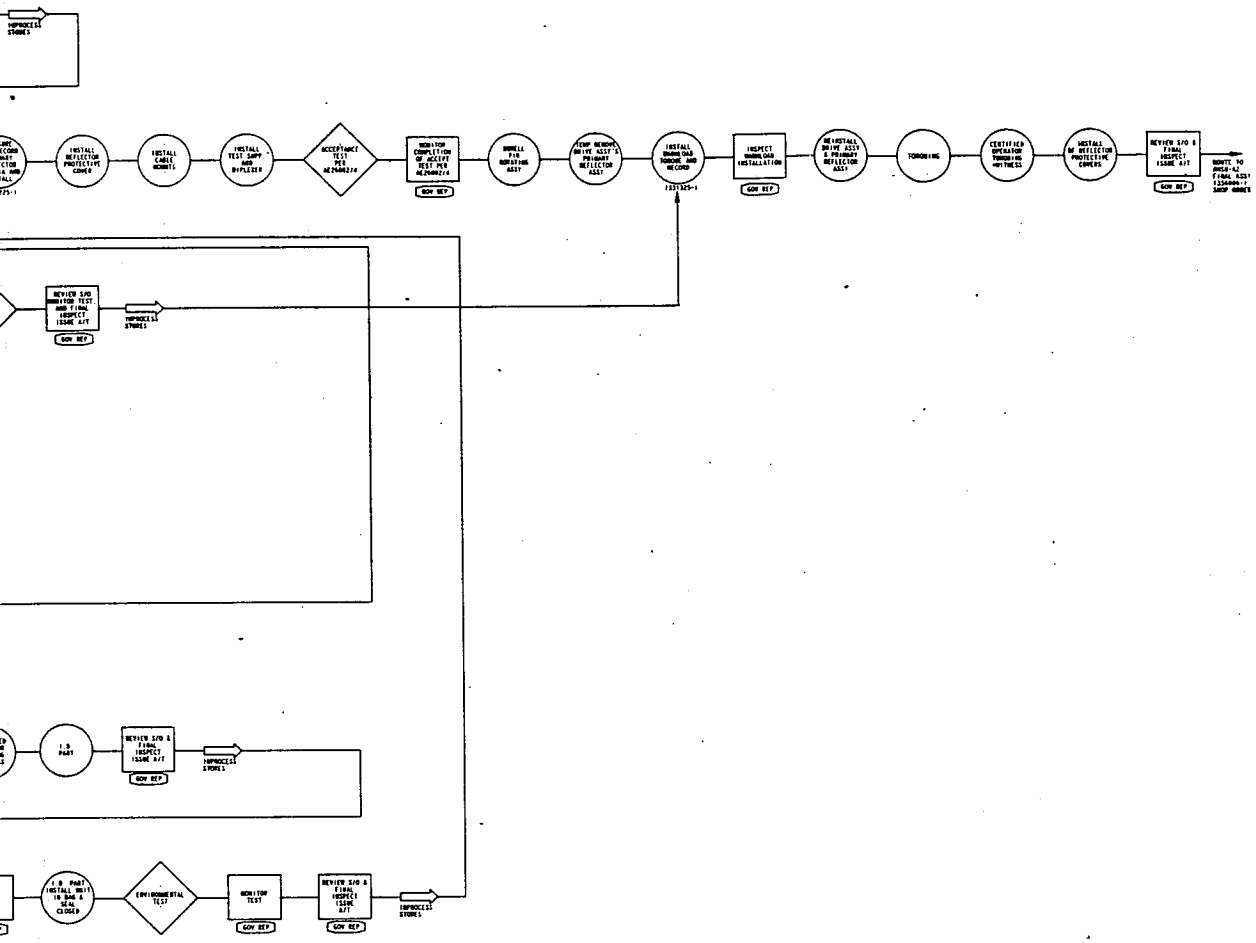
1356813

NOTES:

EOS/AMSU-A2
ANTENNA ASSEMBLY
1331210-2



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



SYMBOLS KEY

- ASSEMBLY OPERATION
- TEST OPERATION
- PC MOVE OPERATION
- GOVERNMENT REPRESENTATIVE
- OUTSIDE PROCESSING
- INSPECTION OPERATION

PART NO	NEXT	FINAL	NEXT ASSEMBLY	USED ON
			APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCE
DECIMALS .XX ± .03 .XXX ± .010
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TITLE: FLOW PLAN, ANTENNA ASSEMBLY EOS/AMSU-A2

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Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
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4. Title and Subtitle	5. Report Date
Integrated Advanced Microwave Sounding Unit-A (AMSU-A), Performance Verification Plan	April 1996
	6. Performing Organization Code: ---
7. Author(s): P. Patel	8. Performing Organization Report No.: 10360A
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9. Performing Organization Name and Address: Aerojet, 1100 W. Hollyvale, Azusa, CA 91702	11. Contract or Grant No.: NAS 5-32314
12. Sponsoring Agency Name and Address: NASA, Goddard Space Flight Center, Greenbelt, Maryland 20771	13. Type of Report and Period Covered: Final
	14. Sponsoring Agency Code: ---

15. Supplementary Notes

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16. ABSTRACT (*Maximum 200 words*)

This is the Performance Verification Plan for the Integrated Advanced Microwave Sounding Unit-A (AMSU-A)

17. Key Words (Suggested by Author(s))	18. Distribution Statement
EOS Microwave System	Unclassified --- Unlimited

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of pages	22. Price
Unclassified	Unclassified	65	---

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Block 10. Work Unit No. Provide Research and Technology Objectives and Plants (RTOP) number.

Block 11. Contract or Grant No. Provide when applicable.

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4. TITLE AND SUBTITLE
Integrated Advanced Microwave Sounding Unit -A (AMSU-A), Performance Verification Plan

5. FUNDING NUMBERS
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6. AUTHOR(S)
P. Patel

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
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8. PERFORMING ORGANIZATION REPORT NUMBER
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NASA
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11. SUPPLEMENTARY NOTES

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12b. DISTRIBUTION CODE
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13. ABSTRACT (*Maximum 200 words*)

This is the Performance Verification Plan for the Integrated Advanced Microwave Sounding Unit-A (AMSU-A).

14. SUBJECT TERMS
EOS
Microwave System

15. NUMBER OF PAGES
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17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
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